FUND

4-year plan

for

Social & Economic Development

1971-75

VOL. I — GENERAL ANALYSIS AND POLICIES

FOREWORD
BY
Dr. the Right Honourable
Sir Seewoosagur Ramgoolam, Kt., M.L.A.
Prime Minister

The achievement of independence on March 12, 1968 gave Mauritius the opportunity of determining her own destiny in social and economic fields. The publication of the National Plan for social and economic development is the most significant event in the history of Mauritius since independence.

Our major social, economic and political problem is unemployment and our greatest asset is our people. Though there is paucity of natural resources, the energies, level of sophistication and the ingenuity of our people can, to a large extent, compensate for it. It has already been proved beyond doubt that our people have the basic intelligence, educational standards and manual dexterity to acquire skills needed in a modern economy. Planning for development in Mauritius must therefore focus on the development of our major asset—our people—and the mobilization of their energies to solve our major problem—unemployment. Under our present circumstances, economic and social development in Mauritius will be meaningless unless it means the creation of productive employment opportunities for our youth. The Plan attempts to do this.

The Plan is comprehensive and ambitious. It covers all aspects of our national life and involves all sections of the people. It assesses the prospects of development in agriculture, industry, other income creating sectors and in public and social services. It is not however a blue-print, fixed or rigid, as many factors on which this Plan depends are outside our control. It is flexible and will be modified as circumstances change. In fact, the publication of this Plan is only the beginning of the planning process. One thing more which the Plan is not: it is not a substitute for work. In fact, it is a call for hard work. It is our work and effort which will translate it into reality.

The task before us is immense. No one can solve all the problems we face, but as each of us does his work so progress will be made. The successful implementation of the Plan will depend on the active participation of every member of our society and will call for co-operation and assistance of many from outside Mauritius as well.

If Mauritius is to be spared social and economic conflict in the future, if growth must be peaceful, she demands no less than the best from us all. The implementation of the Plan demands from us all, in politics, in the public service, in the private sector, in factories, and in the fields ceaseless work, discipline and determination. I have no doubt that for the good of Mauritius, for the young and for the coming generations all Mauritians will play their part in the implementation of this Plan.

I am happy to commend this Plan to the Nation.

15th June, 1971.
Government House,
Port-Louis.

BASIC FACTS

	Mauritius	**Rodrigues**
Location	20° South of the Equator	19° South
	57° East of Greenwich	64° East
Area	720 square miles	40 square miles
	1,860 km^2	100 km^2
Annual Rainfall	Vacoas :—2,135 mm. Plaisance :—1,975 mm.	1,190 mm.
Population (December 1970)	819,000	23,000

Gross Domestic Product (Average 1967–69) Rs 850 million

Currency	Mauritian Rupee £ sterling = Rs 13.33 $ (U.S.) = Rs 5.56	
Public Finance	Recurrent Expenditure (1969/70)	Rs 227.3m.
	Recurrent Revenue (1969/70)	Rs 228.0m.
External Trade	Exports (f.o.b.)—1969	Rs 365m.
	of which sugar	Rs 326m.
	Imports (c.i.f.)—1969	Rs 376m.
	of which food	Rs 133m.
Government	Sovereign Independent State Member of Commonwealth Independent 12th March, 1968	
Outlying Islands	Carcados Carajos (St. Brandon) Agalega	

CONVERSION TABLE

1 arpent = 1.043 acres=0.4221 hectare.

1 acre = 0.9588 arpent=0.4047 hectare

1 hectare = 2.4711 acres=2.3692 arpents.

1 cubic metre = 1.308 cubic yards=35.31 cubic feet.

1 Imperial Gallon = 4.546 litres.

1 lb = 0.4536 kilos.

1 kilo = 2.2046 lbs.

1 metric ton = 1000 kilos=0.9842 long ton.

1 long ton = 1.016 metric ton.

1 Mauritian rupee = 0.075 £ sterling.
= 0.18 U.S. dollars.

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INTRODUCTION

Over the last couple of decades there has been only a modest growth in the economy, in the total output of goods and services, but a rapid growth in the number of people on the Island needing work to support themselves and their families. This has resulted in an increasing proportion of the labour force being without work, without incomes. Perhaps as much as 20 per cent of the labour force is more or less wholly unemployed, or is engaged in very part-time employment or in occupations which do not yield a sufficient income on which to support a family.

After having been more or less stationary for seventy years, the population of Mauritius has doubled in the last twenty five years, largely due to a dramatic reduction in infant and child, but also in adult mortality, and to some increase in fertility due to the more optimistic view of the economic prospects for their prospective children taken by married couples in the immediate post-war period. Since 1965 there has been a sharp drop in the number of children born in relation to the number of adults of child-bearing age. But the young entrants to the labour force over the next decade or two have, for the most part, already been born, and the size of the labour force, the people able and willing to work and needing jobs or opportunities for self employment in order to support their families and themselves, will continue to increase rapidly throughout the seventies and into the eighties.

The number of people who, as far as can be ascertained, were in employment or were working gainfully on their own account at the height of the cane harvest in 1969 was about 195,000. This excludes the "Relief/Development Workers". The size of the labour force, of the number of people needing jobs or working gainfully on their own account, by the end of the 1970's is estimated at 325,000.

If economic development is to mean employment and incomes for the people of Mauritius, this means that employment will have to be a specific objective. For anything like full employment to be achieved by the end of the seventies—the Second U.N. Development Decade—employment will need to increase at a rate of 4.7 per cent a year. Employment cannot be created at this rate through a development strategy which is aimed at the highest rate of growth in the economy, in the total output of goods and services, that can be achieved. Experience in developing countries over the last couple of decades has been that the growth in employment has generally only been one-third that of the growth in Gross

Domestic Product. To leave the employment problem to be solved, as it were, automatically, through an increased demand for labour resulting from greater economic activity, would imply an almost impossibly high growth rate.

It is considered that the productivity of labour in Mauritius—the output per person, net of inputs purchased from outside the enterprise—will only increase by some 2½ per cent a year over the next ten years, more in some sectors than in others. This will be a matter of public policy until a situation approaching full employment has been reached.

The implied rate of growth in the total output of goods and services on the Island is therefore a little over 7 per cent a year, on average, over the next decade. This compares with a rate of 6-7 per cent a year for developing countries as a whole which is considered feasible for the Second U.N. Development Decade by the panel of economists advising the United Nations on the development strategy for the Decade. Such a rate of growth, which for Mauritius would mean a marked upswing in economic activity from the trends of the last decade or two, would risk proving inadequate even to absorb the increase in the labour force, let alone deal with an unemployment situation which has already become chronic, unless economic development is specifically directed towards employment creation. It is not economic development as such that matters to the people of Mauritius, but the benefits they derive from the development that does take place. This in Mauritius means in the first place that all families should be able to earn enough to live on.

A strategy of economic development which sets employment creation as its first objective is, in the first place, a matter of social priority. Government considers that the entire labour force must share in the productive activity of the country. Such a strategy is also indicated by the comparative advantages which Mauritius enjoys in the world economy. It must be recognised that Mauritius is a small economy: a State of 850,000 people with an average income per head of a thousand Rupees a year (less than U.S. $ 200). As in any area the size of Mauritius, even the present modest levels of income can only be sustained, let alone increased, by selling on the world market those goods which Mauritius can produce more efficiently and cheaply and by importing goods for its own needs which can be more cheaply produced elsewhere. The range and proportion of goods produced in Mauritius to supply its own needs is already impressive for an economy of its size.

Mauritius has little land for crop, livestock or forestry production in relation to its population. The net acreage available for cultivation is some 0.3 arpent per person in Mauritius (a tenth of a hectare) and 0.1 arpent in Rodrigues. It has little in the way of other natural resources. Its one underutilised asset is its labour force. This is not simply a question of quantity, since there are more hands in the world than there is productive work for them to do, but of quality. Mauritius has an intelligent, adaptable labour force, capable of acquiring skills comparable to those in highly industrialised countries and an experienced and fairly sophisticated managerial and business community. Its economic future lies in developing this advantage, in putting its labour force to work, and not in activities requiring large amounts of capital in relation to the labour force employed.

The labour force in Mauritius will, because of trends in mortality and fertility rates in the recent past, not only increase rather rapidly over the next decade or so, it will also become younger. By the end of the seventies over half the labour force will be under thirty, even allowing for a reduction in the proportion of teenagers seeking jobs. This factor will work to the comparative advantage of the labour force in Mauritius as compared with that of more highly industrialised countries. The labour force in Mauritius will become increasingly well educated and training programmes will have a large impact on the quality of the labour force as a whole, while the difference in labour costs can be expected to widen, certainly in terms of Rupees, if not in terms of proportions.

Employment must mean productive employment if it is to result in more incomes for the labour force. There is no gain to the economy unless additional employment results in additional output which can be sold on the world market or which meets the needs of Mauritius for consumption or capital formation. It is not anticipated that productive employment for the entire labour force can be created over the four years of the present Development Plan. The total number of people in employment or self-employment or seeking employment by 1975 is expected to exceed 275,000. Over the next four years the economic development that is planned to take place can be expected to provide permanent employment opportunities for some 50,000 more people than were estimated to have been more or less continuously employed or self-employed in 1969. Total employment would then amount to nearly 90 per cent of the labour force. What is to happen in the meantime to those who are unable to find employment or to make a living by working on their own account? They must be provided with jobs and incomes.

This is the immediate priority. One cannot expect people to wait until the end of the decade before they can find work; therefore it is necessary to take immediate steps to mop up the backlog of unemployment in order to create the climate for development. The magnitude of the problem has become too vast to be dealt with as a relief measure to be financed out of the resources available to the Government of Mauritius alone. Taking more people into employment than are necessary to carry out the tasks that have to be performed in either the public or the private sectors, simply so that they will receive a pay packet at the end of the week, is counter-productive in the long run. Getting people turn up to work without having anything to show for it at the end of their labours demoralises not only the workers involved but the labour force as a whole.

To deal with this immediate situation the greater part of those who cannot, for the time being, find work elsewhere in the country will be employed full-time on a programme of public works—the " Travail pour Tous " programme. They will be engaged on constructive work requiring large amount of labour and only modest amount of equipment, supplies and transport— on average Rs 85 worth per worker per month. These works will increase the productive capacity of the economy, or, in some cases, while not resulting in an increased output of saleable goods, will materially improve the amenities available to the people of the localities in which the works are carried out.

The T-P-T programme will, while providing incomes for those who would otherwise be unemployed as economic development on the Island is getting under way, capitalise the present over-abundance of labour by carrying out works which could not be undertaken if labour were a scarce factor of production. It converts a liability—unemployment—into an asset. It uses the labour which is available on work which needs doing but which is not sufficiently revenue producing to be financed out of ordinary capital expenditure. It further withdraws labour from overcrowded occupations or semi-occupations and largely dispenses with the need for stop-gap and half-way measures to deal with the social distress caused by the lack of permanent employment opportunities.

In a development strategy which deliberately selects employment creation as its primary objective, increases in labour productivity, in output per person employed, must take second priority. For the 1970's the strategy of economic development adopted by Government will be one which results in more employment, in *more* incomes, and not necessarily in *higher* incomes per person employed. The main factor determining the productivity of labour in the modern world is the amount of capital employed per worker. It will be public policy to create the conditions for investment which results in more employment, rather than in a higher output per worker or in economic activities which, while adding to the total output of goods and services produced, add little to the total earnings of the labour force.

The productivity of labour also depends on the efficiency with which labour and other factors of production are utilised. One man will produce more per day than another man using the same tools; one machine will give a better performance than another machine which has cost the same; one acre of land will give a higher yield than another acre of the same intrinsic fertility because it is better farmed. In this sense labour in Mauritius is quite remarkably efficient. In so far as the productivity of labour results from better work, a higher level of skills, more competent management and a more efficient combination of the factors of production, the aim, within the enterprise and within the economy as a whole, must be to maximise the efficiency with which labour is utilised. This is not inconsistent with the overriding objective of creating more employment; quite the contrary, employment can only be created on the scale required by the expansion of the labour force, through an increasing comparative advantage of the Mauritian labour force in the world economy.

This does not mean that shifts from more labour intensive to more capital intensive methods of production will be resisted or discouraged, where such shifts would result in a significant increase in total output and in the gains from that output to Mauritian factors of production or significantly reduce costs of production to the economy as a whole, that is to say costs other than labour costs. It means that it will not be public policy to encourage investment which increases output per worker and the profits of the enterprise simply by replacing labour by capital.

It is the responsibility of Government to formulate and carry into effect economic policies resulting in a growth in economic activity benefitting the people of the country as a whole. To increase the earnings from labour on the part of those employed and the profits derived from the employment of labour on the part of owners and managers of enterprises is in the direct interests of those engaged in the process of production and is also their economic function. It is expected, and indeed expected of that part of the labour force actually in employment that they will seek to increase their earnings through higher levels of productivity which will make larger pay packets possible and of employers of labour that they will seek to earn larger profits through increasing the productivity of the labour force they employ. It will not, however, be public policy to subordinate the interests of the labour force as a whole, all of whom need incomes, to the interests of those who would prefer to see higher incomes from the employment of Mauritian labour for themselves than an economic development which results in incomes for all Mauritian families.

* * * *

The main reasons for the modest growth in the economy over the past decade or two have been that agricultural production, which has been the mainstay of the economy has come very near to the limits of the amounts of land that can be cultivated on the Island and to the output that can be harvested per arpent, at least in so far as these are dependent on investment from within the individual enterprise. There has further been little improvement over the past twenty years in the prices at which sugar—the main crop—has been sold; indeed the price of sugar is not much different in terms of sterling than it was 150 years ago. Industrialisation, apart from the processing of agricultural crops—sugar and tea—for export, has been almost wholly geared to meeting the requirements of the small domestic market and therefore limited in scope. Much of the apparent increase in Gross Domestic Product that had taken place in the sixties had been not in the output of goods for sale on the world or domestic markets or in increased earnings of the economy, but in the service sectors and activities which had not increased national income in a meaningful sense but, as intended, spread the available income further.

The increase in the output of the economy needed to provide productive employment opportunities to the entire labour force by the end of the decade will therefore require marked structural changes in the economy. The primary income generating sectors of the economy are commodity production—agricultural and livestock produce and the output of manufacturing industries—and invisible export earnings from the expenditure of tourists and other visitors, foreign ships and airlines and the earnings of shipping registered in Mauritius or chartered by Mauritian companies. Other sectors of the economy provide inputs to these sectors or represent activities made possible by earnings generated in these sectors.

The real earnings of the economy from agricultural production depend, of course, on the prices paid for the main export crops on world markets as well as on the physical volume of output. For the main export crop—sugar—the quantities which can be sold in the different import markets and the prices at which these quantities are sold are more a matter of negotiation than of market forces. This applies not only to the Mauritius crop but to a greater or lesser degree to all sugar exporters and even more to domestic producers in the major consuming markets. It is not important in planning economic development to anticipate what are essentially political decisions on the price structure for the Mauritius sugar crop in the latter part of the seventies. It is not necessary to increase milling capacity in order to process the greater volume of cane that might be grown on the Island over the next ten years, though it will be necessary to continue to concentrate milling capacity into fewer and larger units in order to reduce production costs in sugar milling. Investment which brings more land under cultivation for sugarcane or, (since there is very little additional land which can be brought under cane cultivation,) which increases yields of sugar cane per acre, does not commit the country to any particular level of sugar production but can be used for the production of other crops, should prices or relative costs change as between sugar and alternative crops.

The increase in sugar production which is considered feasible in the seventies is of the order of 2 per cent a year and in total crop and livestock production, at constant (1970) prices, 4 per cent a year. Much of this increase in output will need to be financed through investment in the public sector. It is idle to attempt to determine an optimal cropping pattern as a matter of public policy, except where public investment determines land use for many years to come, as in the case of tea and forestry plantations. Agricultural producers make their own decisions on what crop to grow. The function of Government is to enable producers, both small and large, to take advantage of whatever economic opportunities are open to agricultural and livestock production in Mauritius.

In view of the much discussed possibilities of switching agricultural production from export crops to crops for home consumption, it is relevant to point out that the value of crop and livestock production, in an average season, is Rs 100 million a year, while the value of food, drink and tobacco consumed on the Island, excluding trading margins and indirect taxes, is Rs 225 million. Of this Rs 130 million worth is imported, for the most part comparatively low value crops, in terms of value per arpent, such as grains and the lower priced vegetable oils.

Even if, because of the labour intensive nature of the type of development envisaged, increased agricultural output can, for the most part, be expected to result in increased employment rather than in a higher output per worker, agricultural development cannot, because of the technical limits to production on the Island, generate sufficient employment in the economy as a whole to absorb the anticipated increases in the labour force. Since standards of production are technically more backward in the livestock industry and also because of market considerations, there is proportionately greater scope for an expansion in the output of livestock products, which could certainly be doubled over the next ten years.

Earnings from the expenditure of foreign visitors, foreign ships and airlines and from Mauritian operated shipping have increased rapidly over the past three or four years. These invisible earnings are expected to grow at a faster rate than the economy as a whole.

For the entire Mauritian labour force to be gainfully employed by the end of the decade, the main increase in economic activity must come from manufacturing. Because of the limited size of the domestic market, this will mostly be in manufacturing for the export market. The basis for such a development already exists in a labour force well adapted to acquiring mechanical skills. Both the relative costs and quality of the labour force in Mauritius as compared with those of more highly industrialised countries can be expected to work increasingly to the comparative advantage of Mauritius in the manufacture of comparatively labour intensive products and in labour intensive processes in the production chain.

The comparative advantage of Mauritius in manufacturing industries lies in comparison with countries in which labour costs, and hence also purchasing power, are high and which have comparatively liberal trade regimes.

In order to achieve the development objectives of the Second U.N. Development Decade in Mauritius—work and incomes for all—manufacturing production (including the processing of agricultural crops for export) will need to increase at an average rate of 11 per cent a year. This is not an unduly high rate of increase for a developing country.

Economic activity will, however, need to increase at a much faster rate than in the immediate past. This will require considerably more investment, both in the private and public sectors. There is no reason to expect that finance will be a limiting factor to economic development. The rate of savings in Mauritius is quite high and adequate funds can be expected to be available from foreign sources for private and public investment where such investment can be expected to be profitable or where it can be expected to result in a real growth in the economy and not just in slowing down the gradual impoverishment of the mass of the labour force. Where finance is likely to prove a constraint to economic development is in the capacity of Government to finance recurrent expenditure required to sustain economic development in the public sector.

The limiting factor to economic development is likely to prove to be the capacity to use investment for increasing output and employment. For a developing country the managerial and technical capacity available in Mauritius, in the corporate sector, in small businesses and in the public sector, is impressive, though additional capacity will need to be imported where particular types of experience do not yet exist. This capacity will, however, need to be more efficiently organised to carry out the task set by the need to create 130,000 additional jobs or opportunities for self-employment over the next ten years. This calls not only for better organization but a change of attitudes throughout the society, a readiness to take advantage of the economic opportunities offered and to allow them to be extended to others.

CHAPTER I

BACKGROUND

A. National Income

The total output of goods and services at factor cost in Mauritius[*] has fluctuated around Rs 850 million in recent years. Sugar accounts for more than 60 per cent of a commodity production of Rs 500 million a year. In 1966-1969 the sugar crop averaged 615,000 metric tons (tel quel). At f.o.b. prices the value of the crop (including molasses) has been Rs 340 million a year on average.

2. The gross value of all other crops grown in the Island at f.o.b. or producer prices is around Rs 45 million, of livestock products Rs 20 million and of the lagoon and deep sea fisheries Rs 5 million. Value added in manufacturing was about Rs 65 million in 1970 of which Rs 25 million in the food, drink and tobacco industries (other than sugar milling and the manufacture of tea) and Rs 40 million in other manufacturing enterprises, including the " artisanat ".

3. The population of Mauritius topped the 800,000 mark in 1969-70. The economically active population is probably a little over 30 per cent of the total. The number of people in employment or gainful self-employment[†] is estimated at less than 200,000 at the height of the cane harvest in 1969. A substantial and increasing proportion of the labour force is wholly unemployed or in very part-time employment or engaged in occupations which provide incomes which are wholly inadequate to support even a modest standard of living.

4. Viewed against the growing need for employment and incomes, the situation of Mauritius is one which lacks, within its present economic structure, the dynamism for further economic growth. National income at factor cost would appear to have just about kept pace at current prices with the increase in population over the last fifteen years. This is explained, however, not by the real growth in the economy, but by the fact that the available income has, largely as a result of government policies, been spread around more. Including such inputs as transport

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[*] Except where Rodrigues and the outer islands are specifically referred, the information in this document refers to the main island of Mauritius only.

[†] The term " employment " includes people working gainfully on their own account or in family entreprises.

and electricity, commodity production would appear to have increased at current prices by some 16 per cent over the last ten years, of which one third would be accounted for by a moderate improvement in export prices for sugar. The main increase in national income has occurred in public administration and the service sector which has increased by two thirds over the past ten years.

5. Government (central and local) has, directly and indirectly, created employment and incomes; the number of persons employed in the public service has increased two and a half times to 30,000 in the last ten years; government consumption expenditure has more than doubled and social security payments have trebled. This has resulted in a redistribution of income rather than in any increase in real output.

6. Increased government expenditure has been financed by an increase in indirect taxes which have doubled over the last ten years. Revenue from direct taxes has remained static with a 50 per cent increase in taxes on individuals barely compensating for a fall in receipts from taxes on corporation.

7. The total of wages and salaries and the earnings of people working on their own account have increased by one third over the last ten years at current prices. Deducting indirect taxes the increase has been 20 per cent, that is to say less than the increase in the labour force. Average earnings excluding indirect taxes amount to Rs 2,000 a year per head of the economically active population. After-tax profits and other earnings from property have remained fairly constant overall in relation to the value of commodity production, that is to say they have been increasing at a rate of 1 per cent a year.

8. The increase in output and the redistribution of incomes that have taken place as a result of higher wage rates and increased government spending have meant that the earnings of the labour force per head have remained more or less constant overall over the last ten years at current prices. The increase in prices of consumer goods has been about 2 per cent a year. There has thus been some deterioration in earnings in real terms, in spite of government measures to assist the poorer sections of the population. In spite of the creation of additional jobs in public administration and the service sector and measures to make the national income stretch further, this has not been sufficient to provide employment and incomes for the growing labour force.

B. Crop Production

9. Below the Central Uplands, which are generally too cold and wet and where there is insufficient sunshine for cane cultivation, the gross acreage under cultivation is three quarters of the total land area of 315,000 arpents. Up to the mid-sixties the sugar estates were increasing the acreage under cane to a total net acreage of 120,000 arpents (inclu-

ding land cultivated by metayers).† The estates can push their marginal costs in cane cultivation up substantially in order to secure additional quantities of cane to mill. The fact that the net acreage under cane cultivation on the estates has levelled off at 120,000 arpents in the mid-sixties would suggest, therefore, that the practical limits of the acreage that can be put under sugar cane have just about been reached, at least in so far as further land development depends on investment within the individual enterprise.

10. The 90,000 arpents owned by the smaller and medium sized producers are all under cultivation, since this is land which has been purchased for this purpose. The acreage under sugar cane on these lands has fluctuated around 85,000 arpents in the 1960's.

11. It may be supposed that the same factors which have induced the sugar estates to bring practically all the available land under cane cultivation have also been an incentive to pushing up yields per acre to the technically and economically practical limits, at least under the conditions prevailing in Mauritius, which have led to the adoption of eight or more ratoon crops as a standard practice. While yields on land planted by outgrowers, particularly on the smaller holdings, are lower than on the estates, that is to say below the technically feasible limits, this does not mean that they can be substantially increased within the resources available to the individual enterprise. For the outgrower, marginal returns in cane production are equal to average returns, and the incentive to incur higher costs in order to push up output is therefore less than for the estates. Because of the small size of most of the holdings, costs of land improvements, mechanical cultivation, fertiliser usage etc. are higher than for the estates and the small cultivator cannot command the same technical and organisational expertise as the larger units.

12. While land has become a limiting factor to production on the Island in the last twenty years, labour has ceased to be a limiting factor to production in what throughout the eighteenth and nineteenth centuries was a labour hungry economy. While the acreage under cane cultivation increased between the late fifties and the late sixties by 5 per cent, the total labour force on the Island increased by about 30 per cent.

13. The marked change in the relative scarcities of land and labour has not resulted in any significant shift in production from sugar cane to more high value crops. The acreage under tea has more than doubled in the sixties, but tea, which is mostly grown on the Central Uplands, is largely non-competitive with cane for land use. To produce 17 tons of sugar, selling for Rs 10,000 f.o.b. Port Louis, requires about five arpents and two men, at any rate during the harvesting season. There has been no significant shift into crops requiring fewer acres and more men for the same total value of output.

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†Sharecroppers.

14. Sugar is, in any case, a rather high value crop in terms of value per acre. The fact that marginal costs in sugar milling are low means that the opportunity cost of shifting out of cane cultivation is substantially higher than the average net returns from growing cane. This is an incentive to estates to stay in cane cultivation, since they derive their profits from having larger quantities of cane to mill.

15. For the economy as a whole, the marginal value of sugar produced is somewhat lower than it is for the individual mills, since sugar is exported at various prices, some of which have, during the 1960's, borne no relation to costs of production in cane sugar exporting countries and have, at times, been substantially lower than the negotiated price under the Commonwealth Sugar Agreement, at which 60 per cent of the crop is sold. In recent years the effect of the various statutory and other deductions from the f.o.b. sales value and the agreed share-out between millers and outgrowers has, in fact, been that the price of cane paid to outgrowers has, on average, been just about equal to the marginal value of sugar exported from Mauritius.

16. Mauritius is largely a wage economy, with three quarters of the gainfully occupied labour force in paid employment. In sugar cane 70 per cent—75 per cent of the output is on large estates or holdings producing more than 1,000 tons of cane in a season. The rather static level of sugar and other crop production in the last decade has not, therefore, meant that the growing labour force has been absorbed in commodity production through a decline in labour productivity, as has been the case in some other countries, where land has become a limiting factor to production, but where agricultural production mainly takes place on peasant farms. The contrary has been the case.

17. Sugar cane in Mauritius is comparatively labour intensive, in that half the costs of a ton of cane are labour costs (at current wage rates). Higher levels of output depend, however, largely on inputs other than labour, such as agricultural machinery for land preparation, irrigation equipment, herbicides and fertilizers, though a higher output requires more labour in cutting and loading. While labour has become relatively more abundant, it has not, in a wage economy, become any cheaper, at least for the larger employers. At the very time that more labour was coming onto the market than was being absorbed in commodity production, there has been a marked improvement in wage rates. Total payments to employees increased by 50 per cent between the late fifties and the late sixties, rather more than the growth in the labour force, let alone the growth in employment.

18. The net result of these factors has been that labour productivity in sugar cane production would appear to have increased by one third over the past decade. In 1969 the crop was 15 per cent larger than ten years previously; employment on estates and on holdings of over 25 arpents was 15 per cent lower at the height of the harvesting season at 55,000 persons. Total employment, including self-employment, in crop

production at the time of the cane harvest is around 70,000 persons, 30 per cent of the total labour force, and labour productivity (value added per worker) around Rs 2,500 a year on average. With family enterprises accounting for only a quarter of total crop production, the growth in the total labour force has led to some decline in earnings in this sector, not so much due to higher labour inputs in relation to the volume of output as to reduced employment opportunities outside the enterprise.

19. If output in agriculture has failed to expand appreciably in the last ten to fifteen years due to technical limitations to production, it has also not afforded increased employment as the labour force has increased. Labour ceased to be more or less a free good at the very time that it was becoming relatively plentiful in relation to other factors of production.

C. Livestock

20. Livestock production on the Island of Mauritius is essentially a part-time occupation. Returns to labour in livestock production are among the lowest of any economic activity; the output of the industry is dependent on a supply of labour with no alternative employment opportunities.

21. This has impeded increases in productivity per animal which would require both technical improvements and increased inputs other than labour, in particular purchased feeds. The output of the dairy industry has been declining in the 1960's and pig and poultry production in the small scale sector has remained more or less static. The output of poultry meat has increased significantly in recent years with the establishment of a modern broiler industry and there are now a few medium sized commercial pig producers.

D. Fisheries

22. The problem of overfishing in the 250 square kilometres of lagoons surrounding Mauritius has been with us for the last two hundred years. A royal decree of 1780 restricted fishing in certain parts of the lagoons " owing to the great competition of so many fishermen all over the coast of the island ". In the 1820's the annual catch of the lagoon and offshore fisheries was estimated at over 500 tons. In the 1960's it had been about two thousand tons. While the catch had not increased in the 1960's, there had been an increase in the fishing effort. In 1953 there were 1,778 lagoon fishermen. There are now 3,100 regular lagoon fishermen and another 400 part-time or casual fishermen registered with the Ministry of Agriculture. There may be more who do not register themselves. Labour productivity in the lagoon fisheries would thus appear to average around 650 kg of fish per year per regular fisherman, or about Rs 70 a month.

23. Deep sea fishing, or rather fishing with hand lines on the banks of the outer island and other shoals in the South-West Indian Ocean and bringing the catch back to Mauritius for sale, has been practised since

1927. The fishing effort in this sector has been considerably increased in the latter 1960's. While the catch of the deep-sea demersal fisheries is now equal to or a little larger than that of the lagoon and offshore fisheries, labour productivity is also substantially higher, even with the employment of highly labour intensive methods to catch fish—at between 5 and 6 tons of fish a year per person employed in the industry.

E. Manufacturing

24. While there has been little or no expansion in employment in agriculture in the sixties due largely to technical limitations to output and to the economic structure of the agricultural sector, there has also been no appreciable employment created in the manufacturing sector. In sugar milling labour productivity is high by Mauritian standards—Rs 15,000 a year—and has been increasing, as production has been further concentrated in fewer and larger units. A high labour productivity (that is to say value added in the industry per person employed) would also appear to be characteristic of the tobacco and drinks industries—apparently around Rs 12,000 a year.

25. Manufacturing industries, other than sugar milling and tea and aloe fibre processing, are also almost wholly geared to the domestic market, with some exception in particular industries established recently in the Export Processing Zone. Some industries producing mainly for the local market are exporting to Reunion and Madagascar. Manufacturing industries other than food, drink and tobacco employ some 7,000 persons; a further 9,000 persons are employed or self-employed in artisanal enterprises outside the food and drinks industries, with an average labour productivity which is around Rs 100 a month. While the growth in crop production over the last couple of decades has been limited by technical, that is to say resource factors, manufacturing industries geared to supplying local needs have only had a limited growth potential because of the small size of the local market.

F. Invisible Exports

26. There has been a dramatic increase in invisible exports in recent years, mostly as a result of the effect of the closure of the Suez Canal in 1967 on activity in the harbour of Port Louis, the development of tuna-fishing in the Western Indian Ocean, with ships and shore facilities based on Port Louis, in the 1960's, and the growth in air travel and tourism. As a very rough guide invisible export earnings may be estimated at Rs 50 million in 1970, net of imported goods and services used. This excludes earnings from shipping, but includes the value of local goods and services supplied to foreign ships at Port Louis; it does not include cargo handling costs. In total, net invisible export earnings have probably doubled between 1965 and 1970.

G. Employment Situation

27. As much of the economic activity on the Island can be considered sub-marginal, the concept of employment in the present Mauritian context is somewhat indeterminate. The following description of the present employment situation must therefore be considered to be descriptive rather than analytical.

28. At the height of the crop season in 1969 the sugar industry—estates and plantations of more than 25 arpents—employed 50,000 persons on the agricultural side. A further 2,500 people were employed on private tea estates and 2,000 employed full time on the Government tea programme. Some 20,000 smallholders and people working for smallholders are estimated to be engaged more or less full time in crop production, making a total employment in crop production of between 70,000 and 75,000 persons. Some 2,000 people are engaged in forestry and fibre production. Livestock production is almost wholly a part-time occupation, but fishing would appear to be the main occupation of some 4,000 people.

29. The sugar mills employ over 6,000 people on the factory side and tea factories 400. Bakeries and other establishments processing food for the domestic market employ 1,000 people; and a further 1,000 are employed in the bottled drinks industries (alcoholic and soft drinks) and 400 in tobacco manufacturing. Other manufacturing establishments employing ten or more persons have a total workforce of 7,000. The number of people engaged in small-scale manufacturing enterprises or repair shops outside the food and drink industries is about 9,000.

30. Activity in the construction industry has been declining in recent years. The amount of building and repair work carried out in 1969 would suggest a work force of 13,000 in the industry on a full-time basis. Other economic infrastructure activities, mostly road transport and the docks, probably employ about 15,000 people.

31. Employment in the service sector is even more difficult to ascertain, but putting all the available information together, the position would, broadly speaking, appear to be that there are some 20,000 people engaged in import and export, wholesale and retail trade; 15,000 in education, health and other service establishments; 15,000 in public administration and related services and 15,000 in personal services such as housemaids and hairdressers.

32. Total employment (including self-employment), at the time of the year when employment is at its peak, would therefore appear to be around 195,000. This excludes the so called " relief/development workers ". The concept of the economically active population cannot, in the current pattern of employment in Mauritius, be given a precise definition; with so much part-time and barely remunerative employment, any estimate of the degree of unemployment and under-employment of the economically active population would hardly be meaningful. That there is a great deal of unemployment and sub-marginal employment is a matter of observation.

EMPLOYMENT AND PRODUCTIVITY, 1969

	Employment	*Productivity Per Person*	*Gross Domestic Product at Factor Cost (1967–69 Average)*
	No.	*Rs*	*Million Rs*
Agriculture, Forestry and Livestock	72,300	2,800	203
Lagoon and Offshore Fisheries	3,500	500	2
Marine Fisheries	300	3,600	1
Mining and Quarrying ...	400	2,500	1
Processing Agricultural Export Crops	6,600	11,820	78
Manufacturing :			
Establishments employing ten or more persons ...	9,000	5,000	54
Artisanat	9,400	1,200	
Construction and Public Works	13,000	3,920	51
Electricity, Water and Public Utilities	1,300	23,080	30
Transport and Communications	13,400	7,610	102
Import and Export, Wholesale and Retail Trade ...	19,800	4,540	90
Services	32,100	6,040	194
Public Administration ...	13,900	3,160	44
TOTAL ...	195,000	4,360	850

CHAPTER II

THE APPROACH TO PLANNING AND DEVELOPMENT OBJECTIVES

A. The Approach

(i) Population and Labour Force

Since the end of the arrival of indentured labour from India some ninety years ago up to the last war the population of Mauritius has remained fairly static at below 400,000. As a result of a sharp drop in adult as well as infant and child mortality, mainly due to the eradication of malaria, and a higher than usual level of fertility, which, in a wage economy, is to some extent influenced by the general economic climate at the time, the population of Mauritius has doubled in the last twenty five years to 815,000 in 1970.

2. Since 1965, however, there has been a dramatic decline in fertility, resulting in a drop in the gross reproduction rate from 3 to 2 in the space of five years. Fertility rates will need to be brought down further quite rapidly. With the success in Family Planning, there is no reason to expect, as was feared in prognostications made ten years ago, that the population situation on the Island would prove catastrophic.

3. But, the much larger post-war generation has already begun swelling the labour force at a faster rate than the increase in output, in particular output in the primary income generating sectors of the economy, that is to say commodity production and invisible exports. In 1970 the number of adult males on the Island aged 20 and over was 190,000. By 1980 the number of adult males will have increased by 40 per cent to 270,000. Moreover, with a rather younger population, birth rates will continue to be quite high for some time, even if age specific fertility rates continue to fall quite rapidly, as is to be anticipated.

4. Trends in birth and survival rates over the last twenty five years are also resulting in marked changes in the age composition of the labour force. While the total adult population will increase by 40 per cent over the next ten years, the number of men in their twenties will increase by 65 per cent and will, by 1980, constitute 40 per cent of the adult male population. This means that investment now in the education of children and the training of young people will have a large and rapid effect on the skills of the labour force as a whole.

5. Of the 655,000 people in Mauritius who will be aged 15 or over by 1980, it is expected that 325,000 will be in the labour force, that is to say they will be in paid employment, if the jobs are available, or will be primarily working on their own account or as part of a family enterprise.

6. Estimated labour participation rates by the end of the decade are partly a projection of what would appear to be the present pattern and partly a matter of policy. In particular a marked drop in labour participation rates by teenagers with the extension of educational and training facilities, a sharp drop in the proportion of men over the age of retirement still at work and some increase in labour participation rates by women, in view of the increased employment opportunities for women, are expected to result from the structural changes envisaged in the economy.

Age Structure and Labour Force

	1969 Population	*1980 Population*	*Estimated 1980 Labour Participation Rates*	*1980 Labour Force*
	Thous.		%	*Thous.*
Males				
15–19 ...	49	60	40	24
20–29 ...	59	103	95	98
30–39 ...	41	62		59
40–49 ...	38	39		37
50–59 ...	26	35	75	26
20–59 ...	164	239	92	220
60 and over ...	20	29	15	4
Total Males (15 and over) ...	233	328		248
Females				
15–19 ...	49	58	24	77
20–59 ...	159	236		
60 and over ...	26	33		
Total Females (15 and over) ..	234	327		77
Total Labour Force ...	—	—		325

7. While the number of men between the ages of 20 and 59 will be 75,000 greater by 1980 and the total economically active population perhaps larger by a greater number (allowing for nearly one quarter of the women to be economically active if the employment opportunities are available), the gap between the labour force ten years hence and the present number of employment opportunities is of the order of 130,000. The challenge to planning in Mauritius is to create 130,000 additional job opportunities during the 1970's. The backlog of unemployment and the rate of expansion of the labour force set the task. As such, development objectives and strategy have of necessity to be largerly employment oriented.

(ii) National Income and Employment

8. Economic development in Mauritius will be meaningless unless it means the creation of employment opportunities, that is incomes, for the working population. Statistically measurable rates of economic growth can take place, and are taking place in many low income countries, in excess of the rates of increase in the population or labour force, without resulting in *additional job* or *additional incomes*. Economic development means nothing, except as a figure in some statistical publication, if it means that an increasing proportion of the population of working age is without work and without the means or with wholly inadequate means to maintain their families. In charting the economic development path to be followed, it is important at the outset to be quite clear on the objectives that are to be reached. What matters is the type of economic development that takes place, and not just how much.

9. The overriding objective of economic development in Mauritius must be, if it is to have any meaning for the people of Mauritius, employment opportunities, that is to say incomes from employment (including self-employment), for the entire labour force, allowing for a certain degree of temporary unemployment as people change their jobs and labour requirements expand or contract in particular sectors and particular enterprises. If there is more employment, that is productive employment, there will necessarily be more output, that is to say more incomes; if there is more production, it does not necessarily follow that there will be more employment or that the gains of development will be adequately shared among the population.

10. If there is a high rate of increase in national income, it is theoretically possible to redistribute that income to those who are not directly benefitting from the increases in income that are taking place. This possibility usually remains somewhat theoretical. Nor is it desirable that a substantial section of people capable of participating in economic activities should derive incomes from these activities without participating in them.

11. Economic growth, in the sense of an increase in the total output of goods and services, cannot, in itself, be considered as an objective of Government economic policy. Nor would this be a sensible long term development strategy for Mauritius, even if trying to achieve the maximum rates of growth in the output of goods and services (subject to balance of payments constraints) may make economic sense in other countries.

12. Mauritius is a small island and its economy is pushing against the present limits in its exploitation of the known natural resources. Its one under-utilised economic asset is its labour force. This labour force has the basic intelligence, educational standards and manual dexterity to acquire the skills needed in the modern economy. What is needed is management, organisation and administration to utilise the available force for productive work.

(iii) Employment, Productivity and Wages

13. It follows from the objective of developing the economy to provide employment opportunities for the entire labour force, that increases in productivity, that is, increase in output per person actually in employment, must take second priority. This means adopting economic policies which will encourage, and channelling public expenditure into, investment which will result, directly or indirectly, in more employment rather than in more output per person already in employment, and discouraging investment which results in higher profits simply through the substitution of labour by capital. It is not the volume of production which is a measure of economic development in any menningful sense, but the benefits which the people of the country derive from that production.

14. In selling on the world market, the comparative advantage of Mauritius is that labour costs are a fraction of those in industrialised countries while at the same time the adaptability and the ability of the labour force to acquire modern skills is comparable to that in industrialised countries. Taking a longer term view, both these factors will work increasingly to the advantage of Mauritius, with labour costs in more highly industrialised countries rising more steeply, probably in relative but certainly in absolute terms than in Mauritius, and with the Mauritian labour force rapidly becoming younger, better educated and more highly trained.

15. Increasing employment does not mean spending more time on unnecessary jobs. While increases in labour productivity must take second place, it would be impractical, in an economy whose future depends on its competitive position in the world economy as a whole, to stand in the way of such increases where a reduction in the labour force in a particular activity results in a substantial increase in total output and not just in the replacement of labour by capital.

16. Technological developments and the integration of the Mauritian economy with increasingly capital intensive sectors of the economies of highly industrialised countries, for instance in transportation, will make increases in labour productivity in certain sectors of the economy inescapable. To increase the costs to the economy of Mauritius by resisting such developments is as unhelpful as it is to increase the costs to the economy by encouraging the setting up of capital intensive industries in Mauritius to produce for the home market. The important thing is that there should be sufficient dynamism in the economy to enable the labour made redundant by increases in productivity (which are necessary if the economy is to remain competitive) to find employment in other sectors of the economy or other enterprises where labour requirements are growing.

17. If increases in labour productivity are to be a secondary consideration, this means that earnings per person employed cannot be expected to increase substantially. The benefits to the labour force from an economic development path signposted to employment creation is that there will be work and incomes for all rather than that there will be rapid increases in earnings by those who happen to be in paid employment or who happen to have opportunities for grainful self-employment.

18. Mauritius has now moved out of the era, though only rather recently, in which labour could for practical purposes be considered to be a free good. There are no further economic gains to be made by pushing up the price of labour through administrative action in order to compel management to make a more efficient use of that labour. There is also little economic advantage for a developing economy in low wages as such. The important thing for the investor in Mauritius is not whether his labour costs are high or low, but how they compare with labour costs elsewhere, relative to the comparability of the skills of that labour force. And labour costs are matter not only of the wages paid but also of the reliability of that labour force.

19. Since the earnings of labour (including those of people working on their own account) are the main element in the earnings of Mauritian factors of production, it is in the interest of the economy as a whole that earnings per person employed, and not only the total number of people in gainful employment, should increase, by at least as much as labour productivity. This can, on the whole, in an economy whose development will depend on a large number of initiatives, taken by private firms and individuals, best be left as a matter of bargaining by the parties concerned. There will certainly be a need for Government to protect the interests of that section of the labour force whose bargaining strength is so weak that they would be liable to be exploited. There is little likelihood that particular sections of organised labour will drive up labour costs in their sector

of the economy to such an extent as either to discourage further investment altogether or to push investment into unnecessarily capital intensive processes.

20. Economic development in Mauritius is thus interpreted as meaning returns to labour. It is what people have to live on that matters, not the country's position in some international league tables. The objective of economic development policy to maximise returns to labour, that is to say to the labour force as a whole, does not mean that employers of labour engaged in commercial activities are expected to do anything other than to make profits. An enterprise in these sectors, whether Mauritian or foreign owned, which is unprofitable to its owners is unlikely to be of any benefit to the economy as a whole. The converse, however, does not hold true. If an enterprise is profitable to its owners, it does not follow that this will benefit the economy, that is to say the people of Mauritius.

21. While it would slow down economic development to encumber investment decisions by commercial firms and private individuals by considerations other than the profits to be made from the investment, apart from compliance with the regulations to protect the health and safety of the work force and the surrounding population, measures to encourage new investment, from inside the country or from abroad, must be determined by their contribution to the economy in the creation of additional jobs and additional incomes.

(iv) *The Limiting Factor*

22. It is important that the economy generates saving as well as income for consumption. Both in the public and private sectors, the investible funds which can be mobilized locally to finance development will influence the total amount of funds available for investment on the Island. While domestic resource mobilization will influence, it will not determine the total amount of investment that takes place. Capital and finance, though extremely important, are unlikely to prove a limiting factor to development in Mauritius. What is difficult is how to shape institutional arrangements and administrative procedures to make full use of available knowledge and to motivate people to do what is needed. How fast the problems facing Mauritius can be solved will depend upon the capacity of the people and the Government to organise productive activity. The limit to development will come from this capacity. More specifically the recurrent revenue of the Government which has a great bearing on the capacity that can be created to undertake development and service and maintain the assets thus created may, in Mauritius, tend to become a bottle-neck. But this is a matter of the management of the economy. The organisational, administrative and management capacity will have to be increased as a matter of deliberate policy. While this capacity can be expected to increase in the private sector with the increase in profitable investment, planned implementation efforts in the public sector must give top priority to building up this capacity within the Government

B./Objectives

23. The approach adopted for planning in Mauritius has been worked out in relation to three time horizons:

(i) The Second Development Decade (1970-1980) which is a long enough period for the structural changes needed in the economy for further development to take place; the specific objective for the development decade is " Full Employment " by 1980.

(ii) The period of the 1971-1975 development plan, which is long enough to allow a substantial amount of progress towards the development objectives to be achieved in most fields but not so long as to make detailed projections, in particular of investment, rather speculative. It aims at creating the requisite capacity to work towards the full employment objective, create the necessary infrastructure, bring about maximum improvements in agriculture and livestock production by providing irrigation water and other necessary inputs and start our export oriented industrialization.

(iii) The immediate situation in which action is required to mop up most of the present unemployment while the creation of new long term employment opportunities is getting under way and to create the economic and social climate needed for the implementation of the development plan; it aims at creating 20,000 jobs during the first two years of the 1971-1975 Plan.

CHAPTER III

EMPLOYMENT AND OUTPUT TARGETS

A. Targets for the Second Development Decade

To achieve the objective of creating 130,000 new job opportunities by 1980 will require marked structural changes in the economy. Employment opportunities will need to be created in the first instance in the income generating sectors of the economy, that is in commodity production and invisible exports, if additional employment is to mean additional incomes and full participation by the economically active labour force and not only spreading incomes available to the economy further.

2. In crop production, which has been the mainstay of the economy, output is pushing against the technical limits of production. In all there are some 25,000 arpents not under cultivation or forestry plantations which could be brought under cultivation, mostly in areas not suitable for sugarcane, but also in drier areas, which could be planted to sugarcane or other crops with additional irrigation. The main increase in crop production must, however, come from a more intensive use of land already under cultivation, mainly through increased and more efficient irrigation in the drier areas and through land improvement and improved cultural practices on the smaller holdings.

3. It is considered feasible for the volume of crop production to increase by 40 per cent over the next decade. It would be realistic to allow for an increase in employment in crop production almost proportional to the increase in output, as the increases in production which are feasible are necessarily rather labour intensive. Allowing for an increase in labour productivity of only 1 per cent a year (value added in crop production, excluding sugar milling and tea manufacturing, per person employed) from the present level of Rs 2,700 a year, this would offer scope for 20,000 of the additional employment opportunities that would need to be created in the next decade.

4. Allowing for the marked consumer preference for fresh milk over dried milk powder and for fresh meat over frozen meat and allowing for the comparative advantage in raising non-land using animals as far as production for the domestic market is concerned, a technically more

efficient livestock industry should be able to supply two-thirds of the domestic market for livestock products by 1980. Allowing for the same level of labour productivity as in crop production, this would provide full time employment opportunities for a further 15,000 of the additional employment that will need to be created in this period.

5. Since there has been much talk of the " diversification " of the economy, away from its heavy reliance on sales of sugar in the world market, the sense in which this policy is elaborated in this plan warrants clarification. It is not intended that the production of sugar on the Island should be reduced or held at its present level, whatever that may be; variations in the size of the crop from one season to the next are considerable in relation to any increase in the overall size of the crop that is feasible over the next few years. Since Mauritius has the know-how, as well as reasonably favourable physical conditions, to produce and sell sugar, economic development on the Island will not be speeded up by gratuitously throwing away some of the advantages which Mauritius does possess in international trade.

6. In view of the considerable effort that will be required in every sector of the economy, if that economy is to provide work and incomes for all, it will be imperative for sugar to make its contribution to economic development through higher levels of production and better prices.

7. Where the same resources, in particular land and water, can be more profitably employed in growing higher value crops than sugarcane, farmers will be encouraged to take full advantage of the economic opportunities open to them. A shift out of sugarcane into more high value crops (and not simply the more intensive use of cane lands for growing additional crops) can be expected to take place, as a result of increased export opportunities and the growth of the domestic market for high value crops (in terms of value per acre) other than sugar, and as a result of changes in supply factors, in particular better land preparation and irrigation, which will make more high value crops possible in some cases and more profitable and reliable in others. To attempt to predict the extent of such shifts would be on idle exercise, though there is nothing to suggest that such shifts will make an appreciable difference to the total quantity of sugar produced on the Island in the next few years. Economic policy will need to be directed to ensuring that such economic opportunities as exist or which may arise, on both the marketing and the production side, are available to farmers and that price incentive to growers is broadly in line with the relative marginal values of different crops to the economy as a whole. The suggestion, repeated at intervals over the last ten years, that government policies and those of the sugar industry have distorted incentives to growers as between sugarcanes and alternatives crops would not appear to be substantiated on closer examination.

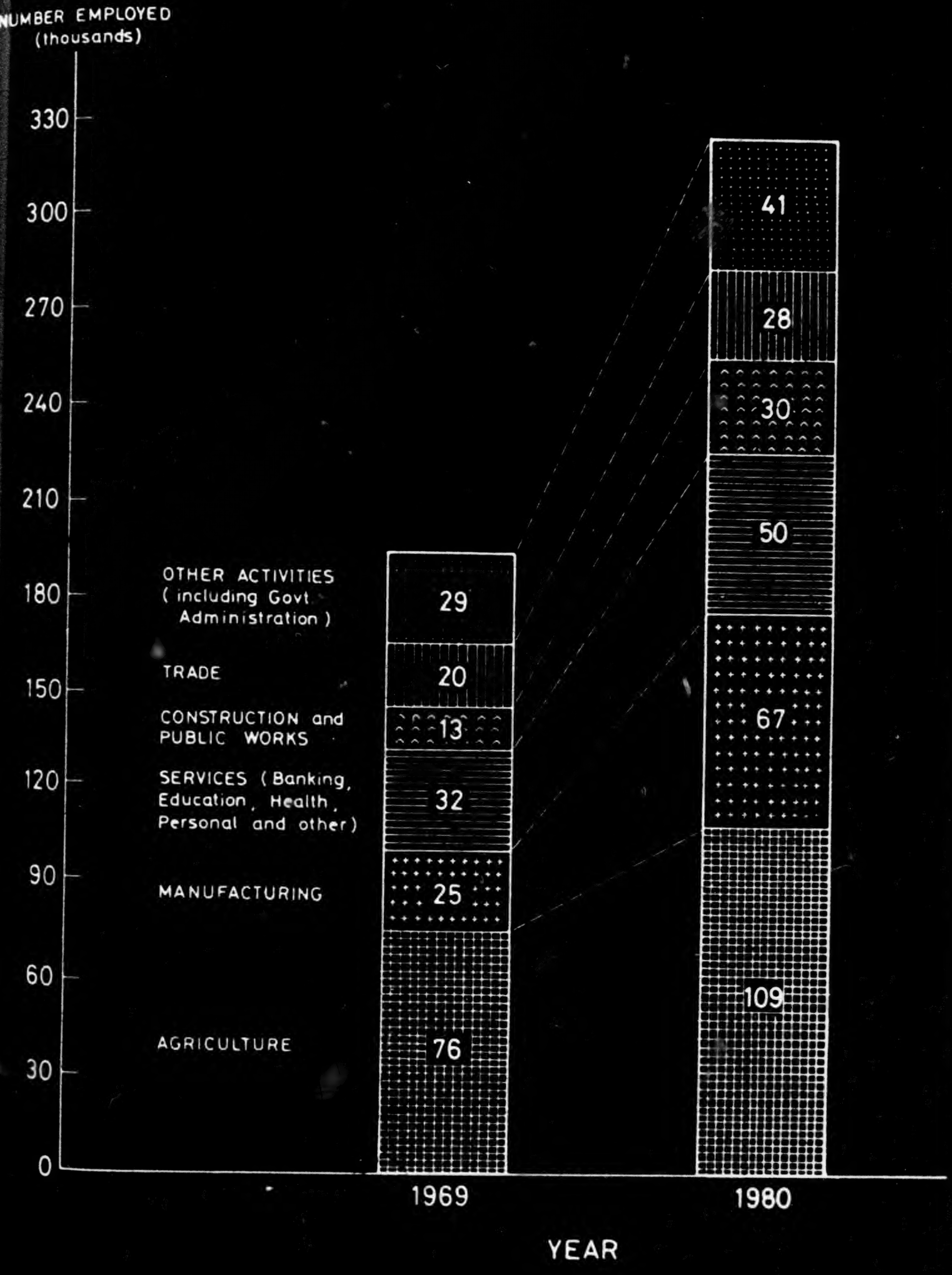
8. " Diversification " is understood to mean that the development objectives cannot be achieved without a great deal else happening in the economy than an increase in the size of the sugar crop and that the relative importance of sugar in the economy will, therefore, be considerably reduced. At present sugar accounts for nearly 90 per cent of crop production (in terms of value added) in an average season and 94 per cent of the total exports. By 1980 the relative share of sugar in total crop production (at 1970 prices) will have fallen to 75 per cent and its share of total agricultural production, including forestry and fibre and livestock products, from 80 per cent to two thirds.

9. Again in terms of value added, sugar accounts for over 60 per cent of total commodity production on the Island at present. With the more rapid increase in the output of other crops and livestock products and the substantial increase in manufacturing activity which is planned to take place, the importance of sugar in total commodity production is expected to drop to less than 40 per cent by the end of the decade.

10. If there is to be a sufficient increase in output in commodity production to generate economic activity throughout the economy to provide employment for the entire labour force at levels of labour productivity, and hence earnings, which are not less than present levels of productivity, the main increase in employment must take place in the manufacturing sector. In view of the restricted market in Mauritius for manufactured goods, in relation to the employment opportunities that will need to be created in this sector, and the capital intensive nature of production of a wide range of manufactured goods consumed in Mauritius, this increase in output must take place in the production for export of manufactured goods with a high labour content or in labour intensive processes in the production chain, where Mauritius has a clear comparative advantage in an efficient and adaptable and comparatively low cost labour force, combined with the advantage of a sophisticated business community.

11. The increase in employment that will be needed in manufacturing establishments employing ten or more persons is of the order of 35,000 over the next ten years. This increase in employment and output in manufacturing industries, which is the necessary indeed the key element in the economic development of Mauritius in the 1970's, is staggering only in relation to the present size of the manufacturing sector. Apart from sugar mills and tea factories, manufacturing industry producing mainly for the export market consists of two factories with combined sales of less than Rs 5 million, though several more factories are already being erected.

STRUCTURE OF EMPLOYMENT 1969 - 1980



12. Allowing for an increase of two-thirds in employment in small manufacturing establishments, the artisanat, over ten years, total employment in manufacturing industries (other than the processing of agricultural products for export) would amount to almost 20 per cent of the labour force. Assuming a labour productivity, on average, in the larger manufacturing establishments of Rs 6,600 a year (excluding the agricultural processing industries) this would give a total value added in manufacturing (large establishments) by 1980 of Rs 300 million or a gross output of the order of Rs 630 million, twice the present level of sales of sugar.

13. This is not a particularly startling figure in relation to the markets for products which could be produced in Mauritius at competitive prices, the management ability in Mauritius or which would be available to Mauritius, or the amount of capital required to finance investment in what would be labour intensive industries. Of the availability and suitability of the labour force for creating a sector of the economy which would virtually be a new departure in the economic development of Mauritius there is no question whatsoever.

Comparative Structure of Employment 1969 and 1980

Activities	*1969*		*1980*		*Increase, 1969—1980*	
	Number Employed	*% of Total*	*Number Employed*	*% of Total*	*In Number*	*in %*
Agriculture (inc. livestock, fisheries, forestry) ...	76,100	39.0%	109,000	33.5%	+ 32,900	+ 43
Mining and Quarrying	400	0.2%	1,000	0.3%	+ 600	+ 150
Manufacturing	25,000	12.0%	67,000	20.6%	+ 42,000	+ 168
(sugar and tea)	(6,600)	3.4%	(6,600)	2.0%	(—)	(—)
(other industries)	(18,400)	9.4%	(60,400)	18.6%	(+ 42,000)	(+ 228)
Construction and Public Works	13,000	6.7%	30,000	9.2%	+ 17,000	+ 131
Electricity, Water, and other public utilities ..	1,300	0.6%	3,000	0.9%	+ 1,700	+ 131
Transport and Communications, (Harbour, Posts & Telegraphs etc.)	13,400	6.9%	20,000	6.2%	+ 6,600	+ 49
Trade	19,800	10.2%	28,000	8.6%	+ 8,200	+ 41
Services (inc. health, education, banking, insurance, personal, etc.)	32,100	16.5%	50,000	14.5%	+ 17,900	+ 56
Central and Local Government General Administration	13,900	7.1%	17,000	5.3%	+ 3,100	+ 22
TOTAL EMPLOYED	195,000	100.0%	325,000	100.0%	+ 130,000	+ 67

14. If employment in commodity production increases by 75,000 over the next ten years, this will generate other economic activity, particulary in construction, resulting in an additional 55,000 employment opportunities in other sectors of the economy.

15. Of the growth in output envisaged, an increase of nearly 5 per cent a year would result from increased employment, if anything approaching full employment is to be achieved during the Second U.N. Development Decade. The structural changes envisaged would mean that employment in the manufacturing industries (excluding the processing of agricultural products for export) would need to increase by more than 11 per cent a year, with more than average increases, of around 8 per cent a year, in the sectors most directly affected by increased manufacturing activity, such as electricity and other public utilities, construction and mining and quarrying. Employment in agriculture would, because of the technical limitations to increased production, only grow by 3 per cent a year.

16. Some increases in labour productivity are technically inescapable, particularly in transport and communications, while in certain other sectors, for instance in retail trade, parts of the service sector and in fishing, there would need to be increases in labour productivity, if employment in these sectors is to provide even minimal incomes for the labour force engaged in these sectors. Overall, increased productivity is expected to account for an increase in output of a little over 2 per cent a year. This will be a matter of policy, at least until such time as the full employment objective is close to being reached.

17. The implied rate of growth in gross domestic product at factor cost (at 1970 prices) to meet the objective of creating employment opportunities for the entire labour force is about 7 per cent a year over the next decade. With the expansion in the manufacturing sector largely taking place in what by Mauritian standards can be considered to be large establishments, the rate of growth [illegible] manufacturing (other than the processing of agricultural products for export) will be more than proportional to the increase in employment. Including sugar milling and the manufacture of tea, the increase in manufacturing output is expected to be of the order of 11 per cent a year. This is not untypical for a developing country and should not place undue strains on the economy in the way of management, the development of skills and the building up of the necessary economic infrastructure.

18. Agricultural production can be expected to grow by only 4 per cent a year (at 1970 prices). Output in other sectors would be more or less proportional to the overall rate of growth of the economy with higher rates of growth in invisible exports such as tourism. The policy of developing the income generating sectors of the economy implies a substantially lower than average growth rate of the order of 2.5 per cent a year in public administration.

Employment, Productivity and Gross Domestic Product (at Factor Cost) 1980

Activities	Employment			Productivity per Person (Rs.)			GDP (at factor cost) (Million Rs.)		
	1969	1980	growth rate	1969*	1980	growth rate	1969*	1980	growth rate
Agriculture (including livestock, forestry, and fisheries)	76,100	109,000	3.3%	2,710	2,910	0.7%	206	317	4.0%
Mining and Quarrying	400	1,000	8.7%	2,500	3,000	1.7%	1	3	10.5%
Manufacturing	25,000	67,000	9.4%	5,280	6,420	1.8%	132	430	11.3%
Processing agricultural crops for export	(6,600)	(6,600)	—	(11,820)	(17,270)	(3.5%)	(78)	(114)	(3.5%)
Other manufacturing industries ...	(18,400)	(60,400)	(11.4%)	(2,940)	(5,240)	(5.4%)	(54)	(316)	(17.4%)
large establishments ...	(9,000)	(44,400)	(15.6%)	(5,000)	(6,600)	(2.5%)			
small establishments ...	(9,400)	(16,000)	(5.0%)	(1,200)	(1,500)	(2.1%)			
Construction & Public Works ...	13,000	30,000	7.9%	3,920	4,450	1.2%	51	133	9.2%
Electricity, water & other public utilities	1,300	3,000	7.9%	23,080	23,080	—	30	69	7.9%
Transport & Communications (Harbour, Posts & Telegraphs etc.) ...	13,400	20,000	3.7%	7,610	11,000	3.4%	102	220	7.2%
Trade	19,800	28,000	3.2%	4,540	7,070	4.1%	90	198	7.4%
Services (inc. health, education, banking, insurance, personal, etc.)	32,100	50,000	4.1%	6,040	8,160	2.7%	186)	347)	5.9%)
Tourism							8)	60)	20.1%)
Central and Local Government general administration	13,900	17,000	1.8%	3,160	3,410	0.7%	44	58	2.5%
	195,000	325,000	4.7%	4,360	5,650	2.4%	850	1,835	7.3%

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*Average 1967–69

B. Employment targets and output 1971-75

19. The main emphasis on the four-year plan 1971-1975 is on building up the essential infrastructure necessary for meeting the overall objectives of commodity production. During the plan period 52,000 new permanent opportunities for employment and self-employment will be created. About half of these will be in agriculture and industry and the other half in supporting services, including health, education and administration. The implied rate of growth in the G.D.P. during the four-year period has been estimated at about 7 per cent p.a.

20. In view of the backlog of unemployment it is further planned to create 20,000 job opportunities under the T-P-T programme.

EMPLOYMENT, 1969, 1975, 1980

Activities	*1969*	*1975*	*1980*
Agriculture (crop production, livestock, forestry, fibre and fisheries) ...	76,100	92,700	109,000
Mining and Quarrying	400	650	1,000
Manufacturing	25,000	35,000	67,000
Processing agricultural crops for export	(6,600)	(6,600)	(6,600)
Other manufacturing industries ...	(18,400)	(28,400)	(60,400)
large establishments ...	(9,000)	(17,000)	(44,400)
small establishments ...	(9,400)	(11,400)	(16,000)
Construction and Public Works ...	13,000	20,500	30,000
Electricity, Water and other Public Utilities	1,300	2,050	3,000
Transport and Communications ...	13,400	16,700	20,000
Trade	19,800	23,900	28,000
Services (including health, education, banking, insurance, personal, etc.) Tourism	32,100	40,900	50,000
Public General Administration ...	13,900	15,500	17,000
TOTAL WORKING POPULATION ...	195,000	247,900	325,000
T-P-T WORKERS		18,000	
TOTAL ECONOMICALLY ACTIVE POPULATION		276,400	
BALANCE...		10,500	

GROSS DOMESTIC PRODUCT (AT FACTOR COST), 1969, 1975, 1980

(Rs. Million)

Activities	*1969*	*1975*	*1980*
Agriculture (crop production, livestock, forestry, fibre and fisheries) ...	206	261	317
Mining and Quarrying	1	2	3
Manufacturing	132	238	430
Processing agricultural crops for export	(78)	(96)	(114)
Other manufacturing industries ...	(54)	(142)	(316)
Construction and Public Works ...	51	86	133
Electricity, Water and Other Public Utilities	30	47	69
Transport and Communications ...	102	155	220
Trade	90	139	198
Services (including health, education, banking, insurance, personal, etc.)	186	260	347
Tourism ...	8	24	60
Public General Administration ...	44	51	58
TOTAL ...	850	1,263	1,835

CHAPTER IV

THE T-P-T PROGRAMME

A. Objectives

The 1971-1975 development plan can be expected to create an additional 52,000 permanent employment opportunities. This would, by the middle of the decade, more or less mop up the back-log of unemployment and match employment creation with the number of new entrants to the labour force. What is to happen in the meantime to those who are at present unemployed and those who willl be entering the labour force for whom employment opportunities will not yet have been created?

2. While the investment is taking place in both the private sector and in the economic infrastructure create the employment opportunities for the existing and prospective labour force, it will be necessary immediately to create employment and incomes for that part of the present labour force not fairly continuously engaged in paid employment or in reasonably remunerative self-employment.

3. The immediate action programme, the ***Travail pour Tous**** programme, is therefore being started with three main objectives:

(i) to provide employment and incomes for those families whose breadwinners cannot immediately find work elsewhere in the economy;

(ii) to eliminate much of the sub-marginal employment that has grown up over the last ten years or so as the result of the excess in the growth of the labour force over the level of employment opportunities in the established Field of economic activity;

(iii) to capitalise the present abundance of labour (not all of it by any means unskilled) in order to create investment which will be productive but which would not ordinarily be justified in relation to the labour input required judged by conventional investment criteria.

4. All incomes in Mauritius are derived from paid employment or from self-employment in the production of goods and services for sale. There is no production to speak of for the household's own subsistence requirements. Families whose breadwinners cannot immediately find

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*Work for all.

work elsewhere in the economy would, in the absence of a special programe to provide work and incomes for all, have to depend for their livelihood on some form of public assistance or (for a greater part but by no means the whole of the population) on reliance on the extended family system.

5. Withdrawing sub-marginally employed persons from the labour market will allow other wage earners to obtain more full-time employment. Cultivators, livestock producers, fishermen, artisans and traders, whose activities are at present only marginally remunerative, because too many people are trying to make a living out of them, could also develop their businesses as full-time occupations. This will further make it possible to dispense with measures for employing more people that are strictly necessary in both the public and private sectors. These measures are costly and reduce the capacity of both the public and private sectors to undertake the investment and reorganisation of economic activities needed to create more employment opportunities in the future. The pressure of more people in the labour force than can be productively employed in the conventional workings of the economy is not only a social and a human problem, but is in itself also a serious impediment to the further development of the economy.

6. The excess labour force which cannot be productively employed in a conventional way but which is a drag on the economy can be used, and will be used in this programme, to:

(i) create investment which is immediately productive but which would not justify the labour input required if labour were a scarce factor of production;

(ii) create investmnet which will result in increased production only after some years and which would not be warranted if the labour employed could be used on more immediately productive investment projects;

(iii) carry out public works which will only make a limited contribution to the production of goods and services with a cash value, but which will result in a considerable improvement in the amenities available to the population.

B. Past Measures

7. Social Welfare has always been a function of the State in Mauritius and persons without other means of livelihood have in the last resort been a charge on the State. With the development of representative government after the last war, more adequate provision has been made for people without incomes or with unduly low incomes in relation to their needs. Old age pensions were introduced for everyone above the age of sixty who is not liable to pay tax. Family allowances are paid to every family with three or more children not having reached their 14th birthday with incomes not exceeding Rs 225 a month. For a long time there has been a system of payments of " outdoor relief " to people without other sources of income.

8. The growth in the labour force in the sixties has brought about a chronic unemployment situation which could no longer be met by relief payments to those temporarily out of work and to those who, for one reason or another, were not capable of working and had no other source of income.

9. In 1964 Government began employing otherwise unemployed or partly employed labour as relief workers, giving them three day's work a week at a rate of Rs 4 a day. The numbers so employed grew to over 30,000 but had to be cut back as the Government was running into a budget deficit. With the slow growth in the economy, tax revenues could only be increased by raising rates of taxation, while the increasing expenditure on social services, education and health, as well as the transfer payments already referred to, resulted in a rapid increase in Government recurrent expenditure.

10. From October/November 1970 all relief workers, of whom there are now around 16,000, are employed for four days a week. Those employed on the tea project (preparing land and planting tea for cultivation by smallholders) are working five days a week and receiving part of their wages in cash and part in food supplied by the United States under title II of Public Law 480. This project will now be carried out by the Mauritius Tea Development Authority, with financial assistance from the International Development Association (IDA), with the workers employed becoming part of the regular labour force in the public sector.

C. Outline of T-P-T. Programme

11. In addition to the 16,000 relief workers employed by Government on a part-time basis, there are some 20,000 men who have registered themselves with the Ministry of Labour as being unemployed. The "Travail pour Tous" programme will replace the present system of part-time relief work and eventually offer full-time employment (for periods of not less than one month) for all men under the age of sixty who opt for this type of work, at the remuneration offered, in preference to employment or self-employment elsewhere in the economy.

12. The T-P-T workers will be precluded, through the hours of work that they will be required to be on the job throughout the month, from undertaking other employment or much in the way of other economic activities. Workers will therefore not join the T-P-T programme if they can follow equally remunerative occupations, even on a part-time basis, elsewhere.

13. The legal minimum wage for male adults in Mauritius is Rs 5 a day. Average returns to labour in employment and self-employment in small scale manufacturing enterprises, in what can be described as the "artisanat", are about Rs 110 a month. Cash payment to T-P-T workers will, apart from budgetary consideration, need to be below this level, since the purpose of the programme is to utilise unemployed or submarginally employed labour and not to divert labour from existing, if not particularly well-paid, jobs.

14. These objectives, of creating employment immediately for labour which would otherwise be wholly unproductive or submarginally productive and of providing at least a bare minimum income for this labour in an economy in which earnings for the majority of the labour force are quite low, can be reconciled by making a cash payment which is substantially less than can be earned in the least well paid alternative full-time occupations and supplementing this by payments in kind.

15. The T-P-T programme is a " package deal " which includes projects that are directly productive, indirectly productive as well as some socially essential projects. Directly productive projects are mostly in the field of land preparation for crop and livestock production, reafforestation, the establishment of fibre plantations, orchards and seedling nurseries, destoning of cane lands and replanting with sugar cane and other crops,fresh water fish ponds, fodder grass, etc. The indirectly productive projects are site development for industry, roads, etc. The socially beneficial projects are the construction of primary schools, urban and rural amenities and other community development activities.

16. The extent of unemployment in Mauritius cannot be meaningfully quantified. Much of the labour force is only employed from time to time,or in every part-time employment, or is engaged in quite submarginal economic activities.

17. The number of men who will wish to avail themselves of work under the T-P-T programme, as they do not, or do not expect to obtain equally remunerative employment elsewhere in the economy, cannot be assessed in advance. Planning is on the basis that this number will initially, once the programme is in full swing, reach an average of 20,000 men a year.

18. For the kinds of work that can be carried out under the "Travail pour Tous" programme, the skills required will, for the most part, be available from among the T-P-T workers themselves. Additional technical supervision will be provided by personnel seconded from the government service or specially recruited for the purpose (in a few instances under technical assistance arrangements).

D. Time Schedule

19. The "Travail pour Tous" programme is a rationalisation, re-orientation and extension of a programme at present providing only part-time work for a limited number of otherwise unemployed workers. There will be a transition, while the first T-P-T projects are started and other measures to relieve the unemployment situation are being phased out.

20. The programme is part of the economic development plan for the first half of the United Nations Second Development decade, intended not only to provide work and incomes for those who would

otherwise be unemployed while employment opportunities in the economy catch up with the growth in the labour force, but to facilitate the economic development that is planned to take place. It is planned to last for no longer than it is needed, that is for only as long as people offer themselves for employment at a remuneration which is rather less attractive than can normally be earned in full-time employment or self-employment elsewhere in the economy.

21. The programme is an integral part of the development plan designed to get Mauritius out of a chronic unemployment situation that has developed over the past ten years and which would otherwise become even more acute over the next ten years.

22. The T-P-T programme will wither away after a few years through the creation of employment opportunities which are at least as remunerative, including of course, public sector investment projects employing workers at the going wage-rate. The frictional unemployment which is a necessary part of any modern economy, particularly one which is undergoing rapid changes, and the hardships due to the inability of some individuals or sections of the population to participate fully in the economic activity of the country will then be dealt with through the regular social security measures which in Mauritius are already quite advanced.

E. Implementation

23. The immediate task, on which the success of the entire long-term development programme depends, is a constructive programme for dealing with the present unemployment situation. In the absence of such a programme, the unemployment situation will persist and probably become even more acute, calling for stopgap measures which would detract from and impede the economic development that is needed for the creation of permanent employment opportunities in both the private and the public sectors.

24. The T-P-T programme is therefore *the number one priority in the country's development plan*.

25. The "Travail pour Tous" programme will be administered by the Development Works Corporation. This is a statutory corporation, established specifically for the purpose of administering this programme, with a Board of Directors appointed by the Prime Minister. The Board consists of Government officials as well as persons from the private sector appointed in their personal capacity. The Corporation has a General Manager and a small administrative and technical staff, partly on secondment from Government service, partly recruited for this purpose and partly obtained from abroad on technical assistance terms.

26. T-P-T workers will be employees of the Corporation. The Corporation will execute most of the work projects directly and will engage government departments, local authorities, non-profit making bodies and, for certain projects, co-operatives and similar associations as contractors, supplying them with both the labour and materials and where required with technical advice. Although this will not be its main function, the Corporation will also be authorised to contract for work to be undertaken abroad for private firms, foreign governments or other agencies, and to undertake work for private firms in Mauritius. T-P-T workers engaged on such work will not receive food payments, but will be paid entirely in cash and, in the case of work undertaken in Mauritius, at a rate not less than the standard wage rate. Nor will such work be undertaken in Mauritius at less than cost. This will not preclude the Corporation from undertaking site development on land to be leased for subsequent further development by private enterprise on terms which do not cover the full costs of such development.

27. The unemployment problem in Mauritius has grown too vast to enable a programme of this kind to be financed out of recurrent revenue. It is expected that external finance will be available in a form which is largely non-competitive with external finance for other types of development programmes.

CHAPTER V

CAPITAL FORMATION AND FINANCING THE PLAN

A. Capital Formation

In order to make adequate progress towards the achievement of the major objective of full-employment by 1980, special attention will have to be paid to the area of capital formation during the Four-Year Plan. This requires consideration of four important aspects:

(1) availability of resources for investments;
(2) capacity to prepare and execute projects;
(3) the urgent infrastructure needs; and
(4) private investment.

From the capital resource point of view, Mauritius is in a happy position and it is potentially feasible to mobilize requisite internal and external resources for investment. However, there is an important inter-relationship between mobilization of resources and preparation and execution of projects (Chapter VI). The capacity to prepare and execute projects finally determines both resource mobilization and actual capital formation that take place. Plan implementation efforts are to be especially devoted to the building up of this capacity to undertake investment.

2. Projects related to the provision or expansion of the economic infrastructure necessary for increasing industrial and agricultural production and exports as well as earnings from invisible exports must be carried out or started during the Four-Year Plan. The lack of building-up of infrastructure in the recent past and immediate requirements of industrialization and increase in agricultural production force the clustering of investment in infrastructure, during the period 1971/75.

3. Of these, water supplies are the most immediately important. The most immediate priority is increasing and rationalising the supply of water for industrial and household use. Furthermore, for full development of the irrigation potential of the Island, two major irrigation projects must be undertaken: one for a part of the Northern Plains, which is considered to be of first priority, and one for the Western Coast. The further development of surface and groundwater resources

for small scale irrigation schemes, which will largely have to be continued in the public sector, as these resources are beyond the confines or beyond the financial means of the individual enterprise, has to be started immediately.

4. Apart from water, the other main limiting factor to increasing output in the services provided in the public sector is electric power, where a major increase in capacity will need to take place in the Plan Period.

5. The other main public expenditure on infrastructure up to 1975 will be on the development of the harbour facilities (including access roads and new through roads), on the development of the airport to handle larger aircraft and increased traffic in both freight and passengers, on site development for industries producing for exports and on telecommunications.

6. In agriculture, the main public sector projects apart from irrigation will be in bringing additional land under cultivation by smallholders, particularly for tea, and in land improvement on land already under cultivation by smallholders. The crucial factor in the development of the livestock industry will be the supply of feed with a high return in the value of livestock products in relation to the cost of the feed.

7. In expenditure on investment in other services that must be provided in the public sector, the main emphasis will have to be on investment which will raise the skills of the labour force.

8. In both agricultural and industrial development Government will, further, have an important role in mobilising external resources for providing medium and long term finance for investment by private firms and individuals.

9. If the full-employment target is to be approached by 1980, there will have to be lumpiness of investment in the public sector during the Four-Year Plan period. Though resources may become available, capacity can remain a problem. The capacity problem in the public sector will therefore be given top priority in plan implementation. The first year of the Plan will have to be spent mostly in executing the continuing projects and in preparing projects and in building-up the required capacity. Considerable expenditure during the first year will be on preparing projects and on design. From the second year onward, the level of actual investment will increase considerably. As programmed (details are given in Volume II), a gross investment of Rs 387 million will be undertaken for the development programme of Ministries.

CAPITAL EXPENDITURE BY ALL MINISTRIES 1971—1975

(Rs 000)

Ministry	*Total Expenditure 1971–1975*	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
Education and Cultural Affairs ...	20.709	4,075	5,534	5,650	5,450
Works	129,017	33,172	28,632	35,187	32,026
Communications	114.462	18,281	29.829	25,440	40,912
Agriculture and Natural Resources ...	69,412	9,146	19,031	20,982	20,253
Co-operatives	750	554	196	—	—
Commerce and Industry ...	2,350	550	400	1,000	400
External Affairs, Tourism and Emigration ...	1,540	510	630	200	200
Housing, Lands and Town and Country Planning ...	2,701	1,000	1,051	650	—
Health	23,299	5,320	5,832	6,300	5,847
Social Security	1,908	654	410	465	379
Youth and Sports	1,636	711	425	250	250
Labour	200	200	—	—	—
Prime Minister's Office ...	12,729	2,989	3,436	3,374	2,930
Local Government	1,500	195	435	435	435
Information and Broadcasting ...	515	129	39	199	148
Economic Planning and Development ...	4,009	2,256	733	520	500
TOTAL ...	386,737	79,742	96,613	100,652	109,730

Another Rs 150 million will be invested by the Parastatal organizations:

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971-75

(Rs. 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL : PUBLIC CORPORATIONS ...	150,483	39,249	41,728	33,541	35,965
Central Electricity Board ...	40.663	13,386	9,413	8,397	9,467
Housing Authorities :					
(i) Central Housing Authority	32.915	6.800	7,000	8,665	10,450
(ii) Mauritius Housing Corporation	25,900	5,000	6,400	7,000	7,500
Mauritius Tea Development Authority	34,385	11,921	12,103	5,733	4,628
Sugar Planters' Mechanical Pool ...	11,000	—	5,000	3,000	3,000
Mauritius Broadcasting Corporation	3.620	1,642	1,312	246	420
Others	2,000	500	500	500	500

10. As the present unemployment situation requires special attention if any development is to take place, the TPT programme designed to create 20,000 jobs, to run out as more permanent job opportunities are created with the economy gathering momentum, will cost about Rs 123 million during 1971/75. This expenditure will be super-imposed on the economy in order to create the climate for development and in the process creating assets which otherwise would not meet the priority test. Also the TPT projects do not compete for resources with other Plan projects.

11. In the Private Sector, it is anticipated that about Rs 515 million will be spent during the four years. During the first two years, the two very capital intensive projects, the fertilizer plant and possibly the cement plant, will absorb a major share of the investment in the industrial sector. As infrastructure is developed in the public sector, particularly water, electricity and industrial sites, industrial development in the export sector will pick up considerably from the third year of the Plan.

GROSS CAPITAL FORMATION PRIVATE SECTOR 1971—1975*

	Rs Million
1. Agriculture, including livestock, fisheries and forestry	96
2. Transport and communications	40
3. Hotels	30
4. Housing	84
5. Industry	265
TOTAL ...	515

12. A high level of investment in relation to Gross Domestic Product will have to be undertaken during the Plan Period if the economy is to take off from the present stagnation. This can become possible with the considerable anticipated inflow of capital both on the public and private accounts. Though the ratio of investment to Gross National Product will increase very rapidly during the Plan Period, it is expected to taper off during the second half of the Second Development Decade. A high level of investment during 1971/75 in the public sector can be undertaken only by large scale importation of capital and implementation capacity. The investment programme is built on this assumption and indications are that it will become possible.

B. The Recurrent Budget

13. In working out the financial aspects of the Plan, the recurrent budget needs particular attention as it reflects Government's capacity to undertake development and maintain assets and services created through development. Although costs of development plans are generally referred to in terms of capital expenditure, they are also reflected in increases in recurrent expenditure due to additional activities in which Government

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*Some of the expenditure in the private sector is included in the public sector programme.

becomes involved. The administrative and technical capacity of the Government has a direct bearing on the volume of public sector investment. Experience in many countries has shown that strains of development very often appear via the recurrent budget. Thus, consideration must be given to the probable impact of development programmes on the balance in the recurrent budget. Both the capacity to raise recurrent revenues as well as the pattern of recurrent expenditure are vital in this regard, and need to be development oriented.

14. In Mauritius, from the point of view of undertaking an ambitious development effort, three factors deserve attention. Firstly, recurrent revenue mobilization over the past five years has been maintained at a high level of over 25 per cent of the Gross Domestic Product. Secondly, the pattern of expenditure has been highly welfare oriented. Due to lack of dynamism in the economy and mounting unemployment, social security, relief and social services accounted for half the total recurrent expenditure. Thirdly, debt servicing increased from 7.5 per cent of the total recurrent expenditure in 1965/66 to about 13 per cent in 1969/70.

PATTERN OF EXPENDITURE AND RECURRENT REVENUE
1965/66—1969/70

Recurrent Expenditure Rs Million

	65/66	*66/67*	*67/68*	*68/69*	*69/70*
Social services, relief and transfer payments	108.22 (50.90)	120.22 (54.32)	126.68 (54.53)	119.29 (49.43)	112.77 (49.65)
Economic and technical services ...	34 38 (16.17)	36.86 (16.65)	36.84 (15.85)	35.49 (14.70)	36.33 (15.99)
General administration ...	41.94 (19.72)	45.95 (20.76)	48.17 (20.73)	45.15 (18.71)	48.55 (21.37)
Debt servicing	16.06 (7.55)	18.27 (8.25)	20.61 (8.87)	41.37 (17 14)	29.45 (12.96)
Transfer to Capital Budget ...	12.00 (5.64)	—	—	—	—
TOTAL RECURRENT EXPENDITURE ...	212.60 (100.00)	221.30 (100.00)	232.30 (100.00)	241.30 (100.00)	227.10 (100.00)

Note : Figures in brackets are percentages to total recurrent expenditure.

15. While the share of expenditure on general administration increased slightly over the past five years, very little capacity in economic and technical services was built up. In view of the development programme envisaged to achieve the target of full employment by 1980, it is vital that Government economic and technical capacity is built up rapidly. Both the established pattern of recurrent spending and revenue raising capacity pose problems in enhancing the technical capacity required to undertake the requisite development expenditure. The whole structure requires rationalization aimed at increasing the absorptive capacity of the Government, that is to say, its capacity to undertake and service development projects.

16. The ratio of recurrent revenues to Gross Domestic Product is already high, and it is socially and politically neither feasible nor desirable to make substantial reductions in social security payments except in the context of income creation for the lower strata of the society. While the Plan aims at increasing incomes through employment creation, during the Plan Period it should be possible not to increase such payments in absolute amount. The share of such payments will thus decline progressively in relation to total revenues as incomes increase. Therefore, the increase in recurrent expenditure, as a matter of deliberate policy, has to be aimed at increasing the absorptive capacity of the Government to undertake development and maintain assets and services thus created.

Recurrent Revenue

1965/66 — 1969/70

Rs Million

	1965/66	*1966/67*	*1967/68*	*1968/69*	*1969/70*
Para-fiscal and non-fiscal revenues	33.45	35.82	55.59	57.83	47.37
(% to GDP) ...	(4.2)	(4.3)	(6.7)	(6.5)	(5.3)
Direct taxes ...	42.75	51.76	55.74	58.32	51.81
(% to GDP) ...	(5.4)	(6.2)	(6.7)	(6.6)	(5.8)
Indirect taxes ...	105.97	111.65	121.12	126.46	128.81
(% to GDP) ...	(13.4)	(13.3)	(14.6)	(14.3)	(14.4)
Total revenues ...	182.2	199.3	232.4	242.6	228.0
(% to GDP) ...	23.0%	23.7%	28.1%	27.3%	25.4%

17. The problem thus posed offers two possibilities. The first consists in artificially swelling budgetary resources by resorting to inflationary finance with adverse implications for prices and for the balance of payments. The second alternative consists in increasing Government absorptive capacity by progressive rationalization of the recurrent expenditure at a high level. This can be done by:

(1) re-organisation of administration to improve the efficiency of the civil service, emphasising development orientation and by creating more technical capacity; this will initially require considerable technical assistance as well as definite training programmes for local personel;

(2) maintaining the social security expenditure at a constant level in absolute amount;

(3) a reduction in ordinary expenditure not essential to economic development;

(4) a stern policy of austerity and budgetary discipline.

18. While inflationary finance on the surface may seem to bring immediate relief to the problem of shortage of finance for the recurrent budget, its effects in an open economy like Mauritius are such as to render steady progress impossible. Development is a long-term process and requires stable conditions over a period of years in order to be successful. The first alternative has therefore been rejected in the present circumstances of Mauritius, as it can only do more damage and create undue restraints in the type of development envisaged. The second alternative has been adopted.

19. The main financial constraint on the size of the Four-Year Plan for the Government sector may thus arise from the availability of resources for the recurrent budget. Continued efforts will therefore be made to re-orient the recurrent budget so as to increase the capacity of the Government to undertake a high level of development necessary to achieve its objective of full employment by 1980 and to provide finance for development. A key role has to be played through the recurrent budget formulation and control which will make reasonably certain that plans once commenced can be carried to a successful conclusion. The administrative implications for the future for the recurrent budget have therefore been carefully worked out. Tentative forecasts of financial and manpower requirements have been made and the feasibility of the proposed plans assessed in the light of expected revenue sources.

20. The broad categories of recurrent expenditure in the Four-Year Plan may be indicated as follows:

DISTRIBUTION OF CENTRAL GOVERNMENT RECURRENT EXPENDITURE 1971–75

(Rs Million)

Categories	*Plan Period*			
	1971/72	*1972/73*	*1973/74*	*1974/75*
Salaries, Wages	134.34	139.62	145.55	151.74
Purchase of Goods and Services	30.79	31.89	33.68	35.57
Transfer to Households	47.65	49.70	50.72	51.82
Other Transfers :—				
to local authorities and administrations ...	9.91	10.26	10.62	11.01
to foreign and international institutions ...	2.19	2.40	2.65	2.80
Public Debt Servicing	33.79	40.60	45.70	50.80
TOTAL RECURRENT SPENDING ...	258.67	274.47	288.92	303.74
TRANSFER TO CAPITAL BUDGET ...	4.00	4.00	4.00	4.00

21. The rising costs of servicing the public debt which will increase from the already relatively high level of 12.9 per cent of the recurrent expenditure in the first year of the Plan to 16.5 per cent in 1974/75, and continued high transfer to households and independent organizations and local authorities in absolute amount, though declining in percentage terms, affect both the capacity of the Government to spend more on economic and technical administration and also on contributions to development.

FUNCTIONAL CLASSIFICATION OF CENTRAL GOVERNMENT RECURRENT EXPENDITURE 1971-75

Rs Million

	1971/72	*1972/73*	*1973/74*	*1974/75*
General Public Administration ...	47.77	49.17	51.76	54.31
Economic Services	11.01	11.62	12.26	13.03
Infrastructure Services	34.25	35.79	37.41	39.11
Social Services	77.84	80.90	84.01	87.33
Social Benefits	43.81	45.82	46.80	47.86
Transfer to economic activities and independent administrations ...	8.01	8.17	8.33	8.50
Transfer to Foreign Sector	2.19	2.40	2.65	2.80
TOTAL ...	224.88	233.87	243.22	252.94
DEBT SERVICING ...	33.79	40.60	45.70	50.80
GROSS TOTAL EXPENDITURE ...	258.67	274.47	288.92	303.74

22. In view of the constraints inherent in the existing pattern of Government expenditure, recurrent expenditure ceilings for Government recurrent spending have been set which:—

(a) seek to hold down overall growth in recurrent spending to a sufficiently low level to ensure a balanced budget with some contribution to the development budget;

(b) allow for a high rate of growth of recurrent expenditure for certain Ministries whose programmes have an important social and development impact; due consideration has been given to available technical assistance in this regard;

(c) reflect growth in recurrent spending implied by the ministerial development programmes.

The resultant rate of growth in recurrent expenditure, excluding debt servicing over the Plan is 4.0 per cent p.a. While a comparatively higher expansion of technical and economic service is allowed for, the growth in general administrative services is held to a minimum.

RECURRENT SPENDING GROWTH CEILINGS 1971-75

	Yearly Growth %
General Administration*	3.5
Ministry of Finance	3.5
Ministry of Agriculture	5.0
Ministry of Communicaions	3.0
Minisry of Works	5.0
Ministry of Commerce and Industry	5.0
Ministry of Education	4.0
Ministry of Housing	5.0
Ministry of Information and Broadcasting	4.0
Ministry of Social Security	0.85
Prisons	5.0
Ministry of Health	4.0
Ministry of Labour	4.0
Ministry of Local Government	2.5
Ministry of Cooperative Development	6.0
Ministry of Economic Planning & Development	3.0
Ministry of Youth and Sports	6.0
Ministry of External Affairs, Tourism & Emigration	3.0
Total Central Government (excluding Debt Servicing)	4.0

23. On the recurrent revenue side, the rate of growth will depend in large measure on the growth of incomes and this in turn will be affected by the course of average sugar prices which can be obtained through various international agreements. However, the assumption on which the Plan is based implies an annual rate of growth of 7.3 per cent. On the same assumption and in view of the considerable tax incentive package essential for attracting investment in industry, it is expected that recurrent revenue will increase on average by about 5 per cent p.a. over the Plan Period. In estimating anticipated recurrent revenue, due regard has been given to improvements in tax collection as well as some increase in non-tax fees, etc. Over the past five years recurrent revenue was on average 25.5 per cent of the G.D.P. This is a very high percentage compared to other developing countries. It may not be possible to increase this percentage over the Plan period, but every effort should be made to secure the same percentage of recurrent revenue. This will require a detailed

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[*] General Administration comprising: Governor General, Judicial, Legislature, Audit, Public Service Commission, Ombudsman Office, Electoral Commissioner's Office, Prime Minister's Office, Printing Department, Rodrigues, Ecclesiastical, Defence, Police, Attorney General's Office, Archives, Mauritius Institute.

review of the tax structure and other service charges. Government proposes to undertake this review as a matter of urgency. In principle, efforts will be made to make the tax structure income elastic, and equitable. New tax bases will have to be explored.

24. The Government recurrent budget position deserves serious thought. On the one hand, revenue collection has already almost reach a limit at over 25 per cent of the G.D.P.; on the other, the pattern of recurrent expenditure with a heavy debt servicing burden and transfer payments does not lend itself to easy rationalization, particularly from the social and political stability points of view, which are so essential to the successful execution of the Plan. With good prospects for the mobilization of development finance, both domestic and external, it would be important for the Government to invest a good part of its development resources in directly productive sectors through the Development Bank and other old or new para-statal organizations. This could provide a good source of non-fiscal revenue. In this context the lending policies of the Development Bank will be of paramount importance.

Indicated Pattern of Government Recurrent Expenditures and Revenues

(Rs. million)

	1971/72	*1972/73*	*1973/74*	*1974/75*
Recurrent Revenues	262.70	278.47	292.92	307.74
1. Direct taxes	61.05	66.94	74.90	83.04
2. Indirect taxes	146.80	149.73	152.96	156.02
3. Para-fiscal and non-fiscal revenues ...	54.85	61.80	65.06	68.68
Recurrent Expenditures	258.67	274.47	288.92	303.74
1. General Administration	53.72	55.19	56.71	58.63
2. Social Relief	46.44	48.45	49.43	50.49
3. Social Services	78.17	81.26	84.40	87.75
4. Economic Services	12.09	12.82	13.59	14.43
5. Infrastructure Services	34.46	36.15	39.09	41.64
6. Debt Servicing	33.79	40.60	45.70	50.80
Net Transfer to Capital Budget ...	4.00	4.00	4.00	4.00

C. Development Finance

25. A broad assessment of the potential domestic resources that could be mobilized by the public sector for undertaking development expenditure reveals an encouraging picture. Indications are that an aggregate of about 315 million rupees could become available to the public sector, including the Development Bank and for transfers to other para-statal organizations, if appropriate measures are taken.

26. While the major financial constraint appears in the availability of resources for the recurrent budget, it will be necessary to secure finance for the development budget on suitable borrowing terms. To a large extent the availability of finance for capital expenditure will depend upon the programming and proposal of projects satisfactory to potential lenders. In view of the already heavy burden of debt servicing, it will be important that external finance for the Plan projects is obtained largely in loans on favourable terms and some portion in grants. Based on present commitments by multilateral and bilateral agencies, and the extent to which financeable projects can be prepared in time, it is anticipated that external resources, including food aid, of Rs 400 million will become available during the Plan Period. As regards domestic finance for the Plan, in addition to the contribution from the recurrent budget mentioned earlier, funds will be raised by local issue of Government securities at market rates of interest. No deficit financing is envisaged during the Plan Period. As long as development expenditure is financed out of genuine domestic savings or through external loans and grants, no serious impact is likely to be felt on the balance of payments position. In fact, the present level of foreign exchange reserves and anticipated trends show that no constraints are likely to be imposed by the balance of payments position. It will be the aim of Government financial and economic policy to maintain the over-all balance of payments surplus during the Plan Period.

27. It is, however, important that the financing of the Plan, both in the public and private sector, should be controlled and orderly. While attempts will be made to secure foreign finance for the public sector on soft terms, it will be equally important that foreign financing of the private investment on short-term loan basis be discouraged. Excessive reliance on suppliers' credit and contractor finance is likely to impair the balance of payments situation. The status of Mauritius will be that of a net borrower for the foreseeable future. Therefore, the country's creditworthiness must be maintained. A monetary stimulus towards expansion will be derived from the expected inflow of capital both on official and private account. In so far as surplus on the over-all balance of payments is maintained, a legitimate basis for the expansion of the means of payment within the country within the limits imposed by the Central Bank's

monetary policy will be provided. From the foregoing assumptions, the following picture of possible sources of finance for the necessary expenditure on public sector development emerges:

	Amount Rs Million
DOMESTIC SOURCES	
1. Transfers from Recurrent Budget ...	16
2. Backlog of Resources	69
3. Surplus of Semi-Government Institutions	30
4. Domestic Borrowing Potential ...	200
TOTAL (DOMESTIC)	315
FOREIGN	
Commitments and anticipated loans and grants, including food aid ...	400
TOTAL POTENTIAL	715

D. Monetary Policy

28. As mentioned earlier, monetary policy will have to play a crucial role in the future development of Mauritius. It must be complementary to fiscal policy and support Government efforts at resource mobilization for development.

29. The establishment in August 1967, of the Central Bank - the Bank of Mauritius—was an important landmark in the monetary history of the Island. It marked the transition from the Sterling Exchange Standard to the Central Banking System. Whatever may have been the virtues of the Sterling Exchange Standard, the rigid relationship between currency supply and external transactions seriously restricted the authority of the Currency Board to regulate the money supply. Under this system, not only did the Board have no control over the currency issued, but the volume of credit also depended completely on the will of the commercial banks. The formulation and implementation of a meaningful monetary policy was therefore not possible. With all the powers of a Central Bank, the Bank of Mauritius is now in a position to formulate and implement monetary policies appropriate to the needs of the economy.

30. Traditionally, monetary policy emphasises price and exchange stability. Though such a policy has its virtues, in a developing country like Mauritius, growth must become as important a concern of monetary policy as stability. In fact, these are not conflicting objectives, although their inter-temporal priorities may vary. On the one hand, sustained growth cannot be achieved without some degree of stability; on the other, stability by itself without growth would be euphemism for stagnation. Monetary policy thus must seek to bring about the right degree of monetary expansion to meet the growing requirements of an expanding

economy. This implies that adequate credit at reasonable cost must be ensured for priority sectors, while the overall supply of money is regulated with a view to holding the price line.

31. Mauritius provides a refreshing example of price stability in a world in which inflationary forces are becoming almost universal. Consumer prices have since 1962, shown an average rise of hardly 2 per cent per annum.* One of the objectives of monetary policy during the Plan Period will be to attempt to maintain this record of remarkable price stability.

32. Economic growth depends upon a steady rise in the proportion of the community's income devoted to the formation of capital. While the level of saving is basically a function of the level of income, the absence of financial intermediaries inhibits the effective mobilisation of whatever savings there are in the economy, for purposes of development. The effective mobilisation of savings through the development of financial intermediaries must therefore be another objective of monetary policy. The creation and development of the local money and capital markets, that is of financial intermediaries, is as necessary for presenting the saver with a choice of different assets, as it is to channel the available funds to investors.

33. The Bank of Mauritius has already developed an active market in Treasury Bills and Government stocks. The fact that the Treasury Bills issued has expanded sizeably since these were first introduced in April 1969, is a reflection of the success achieved so far. Similarly, the successful floating of Government stocks to the tune of Rs 50 million during the year 1970-71 is suggestive of the potentialities of this instrument for the mobilisation of resources. For a more effective mobilisation of resources, not only will the existing institutions have to be strengthened but it may also be essential to evolve new arrangements. Introducing an element of dynamism into the operations of the Post Office Savings Bank, expansion of bank branches in unbanked areas and the establishment of a National Pension Scheme are some of the measures which will be taken during the Plan Period.

34. The Bank Rate in Mauritius had been somewhat unrealistic in that it did not reflect the realities of the domestic situation. This was largely due to the linkage of the Bank Rate in Mauritius with that in the U.K. During the earlier phase of the development of the banking system in Mauritius, there was perhaps some *raison d'être* for linking the Mauritius Bank Rate with the Bank Rate in the U.K. Basically, the need for such a linkage stemmed from the fact that Mauritius has been a net borrower from London, particularly during the busy season. The linking of the two Bank Rates therefore enabled the commercial banks in Mauritius to replenish their resources by borrowing from London, and in

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*The year 1968, when prices rose by about 7 per cent, was an exception ; the unusual rise was primarily attributable to the devaluation of the rupee in November 1967.

turn, lend these funds profitably in Mauritius. Such a linkage, however, rendered the domestic interest rate structure unrealistic and conditioned the Central Bank's ability to pursue an independent interest rate policy consistent with domestic economic realities. The successive reduction of the Bank Rate, three times* during 1969/70, reflects the separation of the Mauritius Bank Rate from that in the U.K. As a consequence, significant reductions in the domestic interest rates were brought about. In fact, the interest rate structure underwent a significant transformation. This in effect means that the Bank of Mauritius is now able to pursue an interest rate policy which is independent of conditions in the U.K. Another aspect of this measure was that commercial banks in Mauritius came to depend increasingly on the discount window of the Central Bank, thus strengthening the efficacy of the Bank Rate as an instrument of monetary policy. The Bank of Mauritius will continue to follow such an independent policy derived from the needs of the economy.

35. Open Market Operations in Mauritius will be important primarily from the structural need to build up a broad-based and active securities market and also from the requirement of assisting the Government in its borrowing operations. Open Market Operations are thus regarded useful more as an instrument of Government borrowing and debt management than for influencing the cost and availability of credit. The Bank will continue to pursue this policy with a view to mobilising resources for the development Plan.

36. In an export economy like Mauritius, Open Market Operations have another important role to play. If autonomous forces are permitted to operate, swings in demand and/or prices for sugar in the world market may generate cyclical fluctuations in the domestic economy as well. One of the objectives of monetary policy in such a context should therefore be to promote economic growth, while at the same time seeking to prevent wide fluctuations in domestic incomes. Open Market Operations will thus also be used to insulate the domestic economy against wide fluctuations generated by exogenous factors.

37. Apart from the above broad indications of a credit policy, it is important to mention two specific aspects: credit to the foreign owned businesses and credit to the small planters.

38. Foreign controlled and owned businesses and enterprises will indeed be welcome to make use of the domestic financial resources available with banking and other financial institutions. In fact, for the industries set up under the Export Processing Zone, provision of finance at concessionary rates, both for the imports of raw materials and for

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*The Bank Rate was reduced from 8 per cent to 7½ per cent on 23rd October, 1969 ; from 7½ per cent on 10th March 1970 to 7 per cent ; and from 7 per cent to 6 per cent on 1st July, 1970.

exports, is envisaged. At the same time, taking a long-term view, the claims of foreign enterprises will have to be balanced against the claims of the domestic economy. There is the further need to induce expatriate enterprises to bring into the country an appropriate size of equity and working capital, and also to plough back part of their profits. Taking into account all these factors, it becomes necessary to relate the domestic borrowings of such enterprises to certain well-defined criteria, equity capital being one of them. Within the broad framework of these criteria, the Bank of Mauritius will endeavour to ensure that domestic finance is made available to foreign enterprises.

39. Traditionally, small planters have been meeting their credit requirements largely through brokers and middlemen. A system will now be evolved whereby the small planters will be able to borrow directly from the commercial banks. In a small country like Mauritius, there is no reason why the banks should not be in a position to judge the credit worthiness of small planters, without the intervention of an intermediary. Such a direct relationship between the planters and the banks would obviously reduce the cost of credit by a sizeable margin. The lower productivity on planters' land is partly a result of both inadequate credit availability and dearer credit. A direct relationship between the banks and the planters, such as the one envisaged, is expected to improve this situation. In this area, the Mauritius Co-operative Central Bank will also play an important role. The Co-operative Central Bank will be strengthened to enable it to extend its coverage and play its role more effectively.

E. Balance of Payments

40. In an open economy like Mauritius where exports constitute more than one-third of the GDP, and 80 per cent of total consumption is met by imports, the balance of payments assumes considerable importance in relation to the development programme. The availability of foreign exchange can become a possible constraint in development. An acceleration in the rate of investment will be immediately translated into an increase in imports of capital goods, equipment and intermediate goods used for processing and manufacturing. Similarly, increases in personal incomes resulting from development lead to a growth in demand for imported consumer goods. The scarcity of foreign exchange, therefore, means a restraint both on the rate of investment and overall economic activity. The feasibility of the Plan, therefore, must be checked in terms of the balance of payments situation and potential gaps, if any, must be met in terms of adjustments in policies and programmes.

41. The balance of payments projections based on Plan programmes and targets are set out in the following Table. The assumptions made for projecting the balance of payments are inherent in the Plan programme and policies and reflect an overall judgment regarding future trends. Under the assumptions spelled out below, these projections indicate that if output and investment targets are achieved and programmes implemented as scheduled, the external financial situation of Mauritius will remain healthy.

BALANCE OF PAYMENTS PROJECTIONS

(*Rs. million*

	1969	*1975*
Exports (f.o.b.)	367	480
Imports (f.o.b.)	329	523
Net Trade Balance	+ 38	− 43
Net Services	− 12	− 17
Net Transfers	+ 15	− 7
Net Long-term Capital Movements ...	+ 12	+128
Other Capital, errors and omissions ...	+ 4	—
	+ 57	+ 61

42. Assuming per caput consumption of imported consumer goods remains constant in absolute amounts, increases in consumption being supplied through import substitution, imports of consumer goods are expected to increase by 1.7 per cent p.a. With the growth of investment in industry, particularly in the Export Processing Zone, the increase in imports of intermediate goods is envisaged to increase at a high rate and in 1975 these imports are expected to be Rs 147 million compared to Rs 103 million in 1969. Imports of capital goods are related to the overall investment programme, and based on previous experience, amount to about 50 per cent of the total investment undertaken.

43. On the export side, it is almost hazardous to make any estimate, as sales of sugar are highly influenced by the vagaries of weather and depend also on the outcome of international negotiations under way or to be undertaken. Nevertheless, it is important to study its prospects in the context of the overall development perspective. It is envisaged that exports of sugar will amount to Rs 354 million by 1975. With the increasing emphasis on export oriented industrialization, it is anticipated that exports of manufactures may reach Rs 76 million by 1975 as compared with Rs 7 million in 1969. Exports of tea are expected to reach Rs 20 million in 1975.

44. On the above assumptions, imports are expected to expand at a faster rate than exports by 7.5 per cent and 4 per cent p.a. respectively. This will result in a deficit on the trade balance in 1975.

45. On the services account, the major increase in earnings is expected to accrue from receipts from tourism. By 1975 tourist receipts are expected to reach about Rs 55 million. However, Mauritius will continue to have a negative balance on the services account.

46. The outflow of current transfers will continue to increase more than the inflow due to increasing debt service charges and incomes accruing to foreign investors.

47. The balance on current account is expected to show a deficit of Rs 67 million in 1975 compared with a surplus of Rs 41 million in 1969. The expected net inflow on capital account is estimated to increase from Rs 12 million in 1969 to Rs 128 million by 1975 in line with the expected rate of growth in the Plan. The payments projections allow for an accumulation of reserves of Rs 61 million in 1975 which will be needed in the light of increasing imports. In view of the effect of the weather on Mauritian exports, it is important to maintain a high level of foreign exchange reserves. As Mauritius must borrow on public account and attract private investment, it will be necessary to maintain its credit worthiness as well as safeguard the stability of the economy. This requires special attention to the balance of payments situation.

CHAPTER VI

IMPLEMENTATION

A. Introduction

Efficient implementation is crucial to the successful achievement of planned objectives and is itself an important aspect of the planning process. The success of the Plan is dependent on the mobilization and efficient utilization of adequate domestic and foreign resources, strict adherence to the policies enunciated and effective execution of the programmes formulated for achieving the objectives. This requires an elaborate organizational system, a development oriented administration and efficient management of the economy. The system must ensure that there are no technical and economic inconsistencies and that national priorities as set forth in the Plan are adhered to. The implementation task is to create this system and make it capable of detailed planning, efficient execution, and to institute methods and techniques of reporting and continuing evaluation of performance.

B. Project Preparation

2. Studies related to the preparation of this Plan have revealed that the major problem of plan implementation lies in the area of project preparation. Detailed preparation of projects is crucial to the implementation process.

Both resource mobilization and implementation affect and are affected by projects. Firstly, the mobilization of resources, particularly foreign resources, is strictly conditional upon the presentation of carefully prepared projects which are not only sound both from economic and technical points of view, but are also consistent with Plan objectives and priorities. Resource mobilization is dependent in this sense on preparation of projects. Secondly, the execution of projects require detailed project designs. This means that apart from any economic appraisal the availability of physical inputs, that is to say men and materials, must be assessed and ensured. Thirdly, detailed project preparation is linked with increasing the capacity to undertake development. The physical inputs required for the execution of projects can also be looked upon as projects which when developed increase development capacity. Such an expansion of the resource base involves the choice of appropriate projects. Finally, the timing for implementation of projects is as important as identifying the necessary resources in that it is the uses of resources as well which determine how quickly or slowly a plan is realized. All this makes it necessary that the implementation process lays special emphasis on project preparation, programming and coordination in the execution of the projects. This will ensure the simultaneous expansion of the resource base as well as the most efficient use of available resources.

3. In view of the importance of project preparation in determining implementation capacity, top priority both in the administrative sense and in the allocation of financial resources will be attached to this area. The focus of planning, therefore, will be to strengthen the design of projects and their implementation so that resource mobilization and implementation do not become bottlenecks.

4. Many projects have been included in the Plan which are not yet adequately prepared for implementation. Immediate work on detailed design of these projects will be undertaken. Even before the preparation of detailed project reports, it is essential to prepare economic, commercial and technical feasibility studies. It is only if a larger number of feasibility studies are available that most promising opportunities can be identified and detailed programmes profitably prepared. Feasibility studies permit rational decisions as to the most worthwhile among alternative investment possibilities.

5. Work on each project involves both technical and economic investigations. The technical personnel are concerned with methods of production, with costing and with the preparation of blueprints, and the economists on the other hand with choices among different methods, with potential markets, assessment of indirect benefits, inter-relationships and with appropriate scale and location of output. This requires both technical staff and economists for the preparation of projects for implementation.

6. Neither executive ministries nor the Ministry of Economic Planning and Development is at present equipped to undertake detailed feasibility studies, project description and design. It would seem extremely difficult and expensive to find well qualified personnel to create project preparation capacity within individual ministries. Attempts to do so will only strain the limited capacity of Mauritius to attract required skills, create duplication of work and make coordination difficult.

7. A Central Projects Bureau will therefore be established within the Ministry of Economic Planning and Development. This Bureau will be responsible for preparing economic, commercial and technical feasibility studies; will identify projects with most promising opportunities and help prepare ministerial priorities. It will also prepare detailed project descriptions with due regard to accuracy of costs and import requirements as well as the enlargement of the overall resource base, creating capacity

within the country for an increased supply of ' inputs '. These studies will be made on a continuing basis so that they can provide a sound basis for future plans. The Bureau will work in close cooperation with the technical staff of Ministries and projects for study will be initiated both by executive ministries and the Bureau itself. While a certain level of technical competence will be built up in the establishment of this Bureau, it will be essential to engage consultants wherever appropriate.

8. Just as an economic plan is required to fulfil the development objectives, it is extremely important to have a physical plan for the development of the island as a whole, the physical plan will set out the framework and criteria for rational land use, for urbanisation and industrialisation and other physical facilities. A special office to prepare such a plan will be set up in the Ministry of Housing. The preparation of engineering and architectural designs for construction will be carried out in a planning office to be set up in the Ministry of Works.

C. Execution of Projects, Reporting and Evaluation

9. Executive ministries will be responsible for the execution of their projects. They will, in consultation with the Central Projects Bureau, determine priorities for their Ministry's projects and new services, leading to annual development budget estimates as well as be responsible for the efficient use of existing assets and services justifying recurrent budget estimates.

10. A reporting system is a necessary part of the machinery for controlling the execution of projects. Though execution and follow-up of the execution of individual projects is the responsibility of respective Ministries, the overall responsibility for coordination and follow-up of all plan activity rests with the Ministry of Economic Planning and Development. Executive Ministries are charged with the task of supervision and execution by remaining in close contact with project executing officers in the field. Field officers will be required to report quarterly, in some cases monthly, to their respective Headquarters on the progress as well as on problems that emerge in the process of implementation. This information will be fed to the Ministry of Economic Planning and Development which will study and suggest such action as may be desirable in removing any bottlenecks that may appear in the implementation process. The quarterly progress reports with appropriate recommendations for speeding up project implementation will be submitted to the Economic Committee of the Cabinet. These reports will also recommend re-direction of surplus funds arising from likely under-spending on some projects to others.

11. An efficient reporting system is also basic to appraisal of plan implementation. However, the temptation to judge results from financial expenditure incurred and physical progress made must be resisted. While these are important indicators for short-run evaluation, in the long run comparison with fundamental objectives of the Plan is essential. Schools

may be built, but lack of availability of school teachers may impede the achievement of plan objectives. Similarly, new land may have been opened up, or loans may have been disbursed, but not properly utilized. An evaluation of each project in terms of its efficient functioning and its contribution and impact on the national economy is important. Such evaluation will be done by the Ministry of Economic Planning and Development periodically.

12. Sound, meaningful and timely evaluation of progress will require efficient administrative attention and appropriate manpower. It will also require prior analysis of projects, setting up realistic time schedules and cost estimates against which to measure progress. This will be done in the process of annual plan preparation. This will commit the executive agency to a certain level of performance. Such a commitment is vital to the efficient utilization of available resources.

13. The Committee of Officers in charge of Ministries which meets every month under the Chairmanship of the Head of the Civil Service will have the additional function of reviewing progress on plan implementation and administrative coordination for removing administrative bottlenecks as they emerge in plan implementation.

D. Administrative Efficiency and Cost Consciousness

14. It is considered extremely important to mobilize qualified and experienced manpower and train local staff with utmost speed and urgency in the art of effective plan implementation. More fundamental, however, is the problem of making the whole machinery of Government a more effective instrument of development policy. The realization of planned objectives and targets will require changes both in administrative organization and methods and in administrative attitudes. An Organization and Methods Adviser has been attached to the Establishment Division. He will look into methods and procedures of transacting Government business with special emphasis on administrative efficiency, simplification of procedures and cost consciousness. Although there is evidence that the civil servants and the organization of the Service have a potential for creating a highly efficient machine, the Civil Service is not at present adequately equipped to implement the plan. Fundamental reform is needed. A high level review of the Civil Service will be undertaken by a committee consisting of top members of the Service assisted by top-ranking international experts. The Committee will be given supreme government support, freedom of movement and adequate time. The Committee will make recommendations on how to bring about development orientation in Government Machinery and in programmes of training of the Administrative Cadre. Pending the recommendations of the Committee, the training of Civil Servants will be pursued and intensified especially in the fields of administration, management and public finance.

15. The implementation of the Plan is also, to a considerable extent, dependent upon external aid, technical assistance as well as finance. Judicious use of available assistance is vital. In fact, the magnitude of assistance that is made available to a country depends largely on how meaningfully and efficiently the aid available is being utilized to further Plan objectives. By its very nature, the efficiency of external assistance depends upon local environment and arrangments. For its efficient use, there is need to improve aid coordination. The Aid Coordination Section in the Ministry of Economic Planning and Development will be strengthened. It will determine priorities and help Ministries prepare requests for submission to foreign aid agencies. In consultation with Ministries, this Section will also prepare a ' recruitment programme ' for technical assistance as well as a programme for training abroad consistent with plan projects and programmes.

16. Determination of priorities and training arrangements for young Mauritians in vocations and professions for which local facilities are not available is significantly linked to plan implementation requirements. The creation of training facilities locally, as well as changing the content of education in Mauritius to fit in the future manpower needs, is also basic to the success of the Plan. Owing to the size of the country and magnitude of need in different professions, certain types of training will have to be continued to be arranged abroad. To look after the details in this vital area, Government plans to establish a Manpower Planning Unit within the Ministry of Economic Planning and Development.

17. The Ministry of Finance has a special role to play in plan implementation. This includes imposition of financial discipline by keeping a close check on the recurrent budget, responsibility for mobilization of resources and for safeguarding the external balance. Development projects have the effect of increasing recurrent costs of Government. An unchecked increase in recurrent costs is detrimental to development planning. Efforts to keep recurrent costs within limits are therefore vital. Efficiency and cost consciousness are paramount considerations in development. In order to perform its plan implementation functions effectively and efficiently, the economic staff of the Ministry of Finance will be strengthened and it will have its own economic intelligence unit.

18. Details of implementation of the industrial and agricultural policies are given in the respective chapters.

E. Para-statal Organisations

19. Ministries will also be responsible for development and efficient operations of the autonomous corporations under their charge. In consultation with the Ministries of Economic Planning and Development and Finance, they will integrate their programmes with sectoral strategy and ensure that all such corporations run on a commercial basis. Each autonomous corporation will have a parent ministry depending upon

its field of operation, and technical similarities with Ministries. The Ministry of Commerce and Industry is responsible for the efficient functioning and development of the Central Electricity Board. The Tea Development Authority will function under the supervision and guidance of the Ministry of Agriculture and Natural Resources. A Central Water Authority is soon to be established for the supply, distribution and development of all public water supplies for all uses throughout the Island. A Development Works Corporation responsible to the Prime Minister has been established to undertake the T.P.T. programme.

20. From the points of view of the planning and administration of public economic services, there is considerable advantage in establishing such para-statal bodies, particularly where there is a clearly defined function and where it is possible for those services to operate on a commercial basis, producing an adequate return on their investments. The establishment of a Port Authority on similar principles is under consideration. Depending on Government involvement in directly productive economic activity, relevant para-statal organizations will be established. Such organizations will have a vital role to play in future development. They will operate within the broad framework of Government policy. Within this framework they will have complete operational autonomy to conduct their day to day business.

F. Annual Plans

21. Planning cannot be expected to achieve desired results if done once in four or five years. Planning is a continuous process. New opportunities that may arise cannot be foreseen at the beginning of each four or five year period nor can the short-term fluctuations in incomes, production, employment and prices be accurately anticipated. Instability due to weather conditions and other forces, require adjustments to conditions from time to time, which may differ from those assumed in the medium-term plan. In this sense medium-term plans have a limited value from a strictly operational point of view, and shorter-term plans are essential.

22. The shorter-term annual plans aim at putting into effect the tasks included in the four year plan, but on the basis of existing possibilities and possibly changed priorities and attempt to achieve the most effective utilization of available resources in the light of changing circumstances.

23. The framework of the ten year perspective or the four year plan which sets out general objectives, resource mobilization and its alternative uses, etc., is based on assumptions which can be expected to change. As such, the policy measures to achieve the objectives are at best given in broad terms. For these to be effective guide-lines in the operational sense, they have to be based on the latest information and circumstances, and more precisely and specifically stated. Government therefore intends to prepare comprehensive annual plans which would include an analysis of the economic situation and a comprehensive presentation of policies,

and advance recruitment planning. It may, however, not be possible to prepare all inclusive comprehensive annual plans from the very beginning, though it is regarded essential for comprehensive planning and effective implementation.

24. Far more information is required to build meaningful annual plans than is now available and channels of regular flow of such information have yet to be established. Efforts towards making annual plans will be undertaken immediately, improving and building up year by year. Such plans are 'reviews' which will provide an opportunity to bring about necessary alterations in plan targets, policies and programmes in view of the need, capacity and new opportunities and problems in various sectors of the economy.

25. The preparation of annual plans will require a comprehensive economic survey of the economy, more efficient and timely collection of statistical data and channels of communication and involvement of various executive ministries and Government agencies in making assessments and recommendations.

26. The economic survey will include an analysis of the state of the economy, which will review the employment situation, wages, skills and manpower availability, sectorwise national income accounts, investments and finance and banking. It will also include an evaluation of plan implementation, comparing planned targets with actual performance and reasons for deviations in order to identify bottlenecks, assess development capacity, skilled manpower problems and the efficient use of existing assets and services. A review of major policies, prices, credit, taxation, incomes and wages, etc. will also be included. Such analysis will make it possible to evaluate the relative performance of different sectors of the economy and assess new opportunities and problems. These studies will then become the basis of revisions in the Plan and suggest measures for following years' plan implementation.

27. The annual plan preparation will also review progress with the private sector and include private investment intentions. The development efforts of Government and those of the private sector must be coordinated and made complementary to each other in a consistent framework of overall objectives, strategy and development effort.

28. As the plan progresses, varying degree of achievements of targets in different areas can be expected. This may create some distortions. For example, agricultural production may increase as expected, but storage and transport facilities may lag behind; industries may go ahead, but water supply and power generation may fall short of requirements. Such eventualities may lead to a cutback on programmes in other sectors. The annual plans in the process of coordinating public and private investment will give consideration to such likely imbalance and readjiust plans accordingly. In terms of planning, however, the development of essential services, like transportation, power, etc. should be ahead of requirements. These essential services will be continuously planned on a long term basis.

29. Besides the selection of well prepared projects in various sectors of the economy aimed at achieving plan targets and objectives, the coordination of fiscal, price, monetary, credit and other economic policies with requirements implied in annual plans is of the utmost importance in making annual plans an 'operational' tool of plan implementation. A permanent Economic Advisory Committee shall be established comprising the Ministry of Economic Planning and Development, the Ministry of Finance and the Bank of Mauritius. The Committee shall be a coordinating and an advisory body (advisory to respective Ministries and to the Economic Committee of the Cabinet, as appropriate) in economic and financial matters. The main functions of the Committee will be to help coordinate the efforts of preparing annual plans, particularly in coordinating the development budget, recurrent budget and the investment programme of public bodies and financial and external finance policies for the coming year. The Committee will also consider all *ad hoc* matters arising during the year.

30. One of the most important things in preparing a comprehensive economic survey and the annual implementation plan is the timely availability of statistical data. Efforts will be made to have all relevant data available in time so that analysis and evaluation of the recent experience can be effectively used in the preparation of annual programmes. Also economic data which are now prepared on a calendar year basis will have to be prepared on financial/plan year basis as planned targets and actual performance must be compared on plan year bases. Statistical information will have to be collected in the same form in which quantitative targets of the plan are defined. Immediate steps will be taken to compile statistical data from the point of view of their usefulness to planning and implementation.

G. The Private Sector

31. The private sector contributes the major share to national income in Mauritius. It also commands considerable resources and managerial expertise. The resource potential as well as enterprise in the private sector must be fully utilized for achieving planned targets. Government will encourage private enterprise within the framework of the Plan. In the Mauritian situation, it is important to find foreign investors who will start business either on their own or in partnership with local enterpreneurs or in partnership with Government. This will be one of the chief aspects of planning for industrialization.

32. A close liaison will be created between Government and the private sector through the establishment of a 'Sectoral Relations Committee'. This Committee will exchange views between the private sector and Government ministries connected with the private sector. Government aims at acquiring up to date knowledge about progress made in the private sector and discussing frankly the difficulties encountered in undertaking expansion and development activities.

33. From the comprehensive planning point of view, this Committee will help elaborate private sector investment plans and in evolving techniques and policies to implement them. It involves establishing channels for the flow of information from the private sector to the public sector and vice-versa. In elaborating private sector plans, Government will need information on investment intentions of the private sector in different fields of activity. Government on the other hand will indicate areas of new investment in which private sector will be encouraged.

H. Economic Committee of the Cabinet

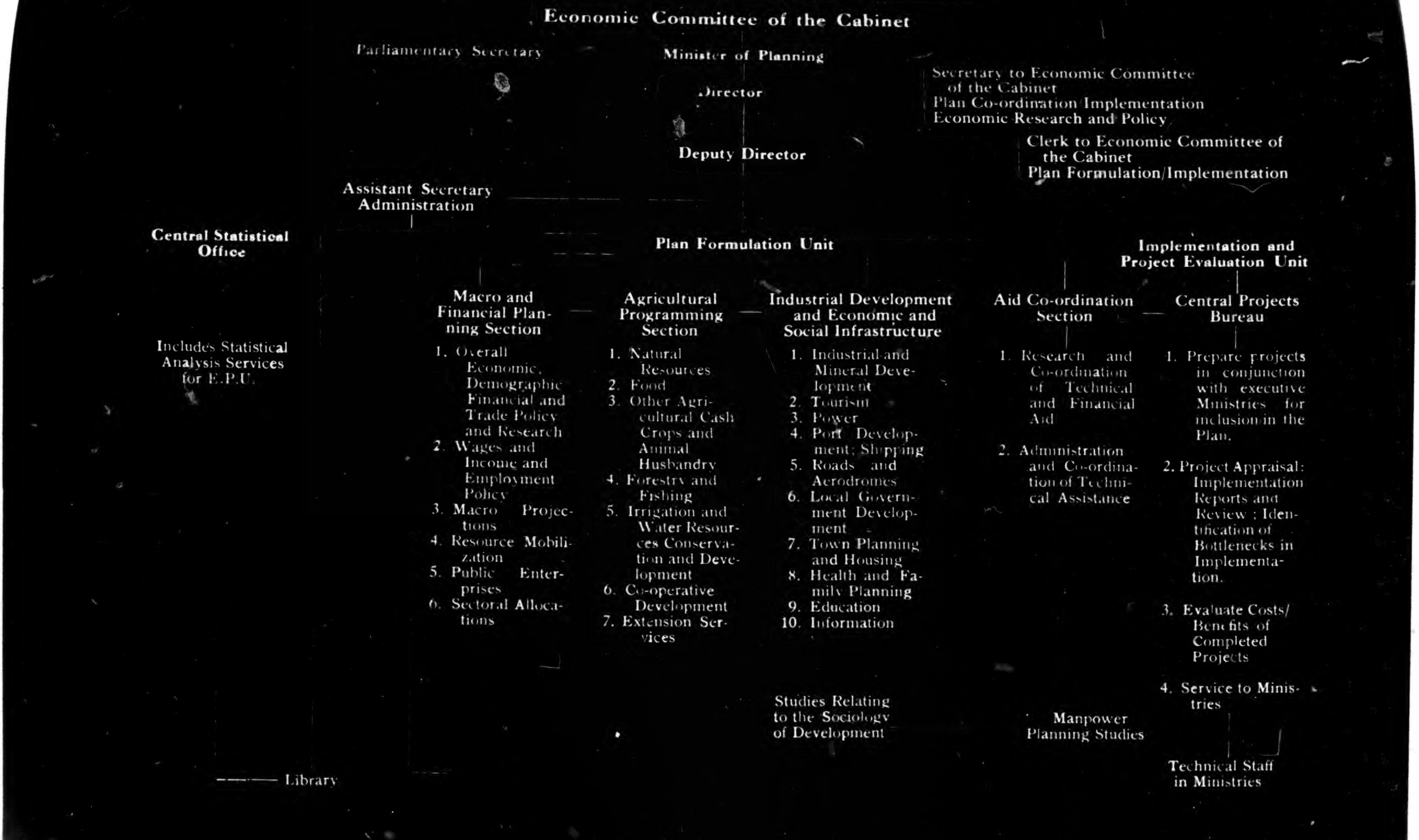
34. The mobilization of efforts (resources, people's energies and organization) for the realization of the Plan's objectives makes it essential to centralise decision-making in regard to development policy and to strengthen coordination and control within the Government. A single and firm leadership in matters of development is essential. The Ministry of Economic Planning and Development therefore has a direct approach to the Prime Minister and his Cabinet. This is achieved through the Economic Committee of the Cabinet. The Prime Minister is the Chairman of this Committee which consists of all ministers representing economic ministries. The Secretariat is provided by the Ministry of Economic Planning and Development.

35. Decisions on vital issues such as level of taxation, current consumption, resource mobilization, foreign aid, relieving unemployment through public works, investment priorities, land reforms and other institutional changes are made by the Cabinet. As it is the Cabinet which makes the choice between alternatives and gives overall political and social guidance, planners must have close access to a Committee of the Cabinet so that implications and repercussions and the choices involved are put before them. The planning/implementation process requires the imposition of a certain discipline. The authority to impose this discipline can only be derived from the Cabinet and the Prime Minister. If planning discipline is not strictly imposed, the pet projects of certain ministries and pressures from interested groups can disturb economic priorities, create unnecessary bottlenecks in implementation and distort the planning design.

I. Public Participation

36. The translation of plan objectives, policies and programmes into reality is a challenging task. It will require concerted effort by not only the Government, but also by institutions and individuals who can meaningfully help the effective implementation of the Plan. It is a challenge to the whole nation. Development Committees have already been established at district and municipal level. These will provide the opportunity for discussing the planning and implemenation problems at the local level. Government will strengthen the channels of communication between central Government agencies and informed opinion throughout the country. Government will also take effective steps to inform the public at large of the problems and prospects of plan implementation and mobilize public enthusiasm in support of the implementation task.

PLANNING—IMPLEMENTATION ORGANISATION



Economic Committee of the Cabinet

Parliamentary Secretary

Minister of Planning

Director

Deputy Director

Secretary to Economic Committee of the Cabinet
Plan Co-ordination Implementation
Economic Research and Policy

Clerk to Economic Committee of the Cabinet
Plan Formulation/Implementation

Assistant Secretary Administration

Central Statistical Office

Includes Statistical Analysis Services for E.P.U.

Library

Plan Formulation Unit

Macro and Financial Planning Section

1. Overall Economic, Demographic Financial and Trade Policy and Research
2. Wages and Income and Employment Policy
3. Macro Projections
4. Resource Mobilization
5. Public Enterprises
6. Sectoral Allocations

Agricultural Programming Section

1. Natural Resources
2. Food
3. Other Agricultural Cash Crops and Animal Husbandry
4. Forestry and Fishing
5. Irrigation and Water Resources Conservation and Development
6. Co-operative Development
7. Extension Services

Industrial Development and Economic and Social Infrastructure

1. Industrial and Mineral Development
2. Tourism
3. Power
4. Port Development; Shipping
5. Roads and Aerodromes
6. Local Government Development
7. Town Planning and Housing
8. Health and Family Planning
9. Education
10. Information

Studies Relating to the Sociology of Development

Implementation and Project Evaluation Unit

Aid Co-ordination Section

1. Research and Co-ordination of Technical and Financial Aid
2. Administration and Co-ordination of Technical Assistance

Central Projects Bureau

1. Prepare projects in conjunction with executive Ministries for inclusion in the Plan.
2. Project Appraisal: Implementation Reports and Review; Identification of Bottlenecks in Implementation.
3. Evaluate Costs/Benefits of Completed Projects
4. Service to Ministries

Manpower Planning Studies

Technical Staff in Ministries

CHAPTER VII

POPULATION

A. Population Trends

Like many other developing countries Mauritius experienced a rapid growth in its population over the last three decades. The rate of natural increase which is the difference between the crude birth rate and the crude death rate rose from about 7 per thousand, the figure round which it fluctuated immediately after the outbreak of World War II, to 16.3 in 1944 and still more sharply to 35.8 in 1950. The rate of natural increase has declined to around 29-30 per thousand between 1954 and 1964. Since 1965 a fall in fertility has reduced the rate of natural increase to 19 per 1,000.

2. The sharp rise in the birth rate of 1944 was caused by the marriage of members of the Royal Pioneer Corps leaving for overseas service. The decline in mortality has, however, been the most important factor in population growth. Malaria which took a heavy toll—as much as 36.8 per cent of total deaths in 1920—had been completely eradicated by 1948. This had an immediate and striking effect on birth and death rates. Further, after the end of the Second World War improvement in housing, water supplies and other environmental conditions also helped to reduce the death rate. Since 1948, as a result of improved environmental conditions, antenatal care and vigorous vaccination campaigns against diphteria, whooping cough, tetanus, poliomyelitis and tuberculosis, infant and child mortality has declined sharply. Average life expectancy at birth for males improved from thirty-two years in 1942/46 to fifty-nine years in 1961/63.

3. All these factors have brought about a complete change in the age structure of the population. The number of females in the reproductive age group (15-39) rose from 108,000 in 1944 to 145,000 in 1962, this increase in the potential number of mothers is creating a serious problem of population explosion.

4. Since 1965, however, there has been a marked decline in fertility rates. The gross reproduction rate fell from 2.72 in 1965 to 1.92 in 1969 while the specific birth rates* for the age group 15-19 fell from 85.1 in 1965 to 65.3 in 1969. The birth rates for the age group 20-24 were 290.0 in 1965 and 203.6 in 1969 or a decrease of 30 per cent.

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*Births per 1,000 women in each age group.

5. If the fertility rates were not to decline below the 1969 rates the dependency ratio† would fall to 681 and the population would reach the million mark by 1980. In any case the number of people in the 15-64 year age groups will be 37 per cent greater than in 1970.

B. Population Policy

6. To say that Mauritius has become overpopulated means that within the present structure of its economy, available resources are insufficient to enable all Mauritian families to earn a living from gainful employment or self-employment. The population of Mauritius cannot be contained within the present structure of the economy. A population policy cannot in this situation be a substitute for the structural changes that are needed in the economy; it needs to be an integral part of a strategy for the economic and social development of the people of Mauritius.

7. The absolute size of the population of any area in relation to its natural resources, its stock of capital, the technologies employed in production and (in the case of a small economic unit such as Mauritius) its terms of trade, is relevant only to a particular point in time. A population is not a quantity but a process. Population policy must concern itself with the dynamics of rates of change in the population as a whole and in its structure.

8. Over the past two decades the population of the Island of Mauritius has been increasing at an annual rate of 2.7 per cent, peaking at over 3½ per cent in 1960 and coming down to just under 2 per cent at the present time, as a result of a decline in fertility over the past five or six years. A high rate of population growth means that a comparatively high rate of investment is required simply to maintain levels of income per head of the population. As a result of a highly skewed income distribution, the rate of savings in Mauritius is quite high for a low income country. Even so, investment, which in Mauritius has always been largely financed from internal sources, has been less than adequate even to maintain standards of living over the past decade.

9. A high rate of population growth further requires a comparatively high rate of increase in both capital and recurrent expenditure on social, administrative and other public services, simply to maintain the level of these services. Services provided by the State free of charge or at a fraction of cost are an important part of the consumption of the lower income groups, which in Mauritius include the great mass of the population. Here, again, a high rate of increase in expenditure on these services, for instance the health services, has resulted in the level of these services being barely maintained.

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†number of persons below age 15 and aged 65 and over per 1,000 persons in the economically active age group 15–64.

10. The high rates of population growth in Mauritius over the past couple of decades, which at one time came close to the biological limits, are the result of more newly-borns surviving to adulthood, a higher proportion of adults living out their reproductive age span, and a more optimistic view taken by couples in the immediate post-war period of the economic future for their prospective children. The result, with a time lag of one and a half to two decades, is a rate of growth in the labour force which is substantially higher, and will for the next decade or two continue to be higher, than the current rate of increase of the population as a whole. Indeed it is this factor which dictates a strategy of employment creation—channelling investment and devising policies which will result in employment and incomes for the labour force—rather than increasing labour productivity through the introduction of more capital intensive technologies, that is to say increasing earnings and profits per person employed. However, unless the rate of increase in the labour force can be checked, this factor will continue to dictate a strategy of employment creation. It imposes a choice of jobs for all or better jobs for a few.

11. This choice inevitably sets up a conflict, both within the labour force, and, more important in the Mauritian context, between the interests of the labour force as a whole and the owners and managers of enterprises within the economy, whose interests, and indeed whose economic function, are to maximise the profits of their particular enterprise. It is possible to take a short term view and to adopt a development strategy which aims at increasing the total output of the economy at the cost of increasing unemployment.

12. A long term view demands a resolution of this conflict of interests. This means better jobs and a higher standard of living for all. This can only come about through curbing the rate of increase in the labour force.

13. A high rate of growth in the size of the labour force, as a result of the demographic changes that have taken place over the last couple of decades, also means that a higher proportion of the population is in the peak of their reproductive age, that is to say, in their twenties and thirties. The age structure of the population of Mauritius over the next decade or so will result in comparatively high rates of increase in the total population, even if the number of children borne by women at specific ages can be brought down fairly quickly to levels comparable to those in highly industrialised countries.

14. If there is an increase in the proportion of people in their twenties in the adult population—and by 1980 people in their twenties will constitute 36 per cent of the population aged twenty and over—this will also mean that, if fertility rates remain constant, the crude birth rate will remain high. A high proportion of children in the population means that a high proportion of public expenditure needs to be devoted simply to maintaining the level of social services, in particular education and health, instead of being available for an improvement in those services, not least for the benefit of the children themselves.

15. A population policy for Mauritius must aim at reducing fertili rates to levels comparable to those in highly industrialised countries ov the next ten to fifteen years, in order to improve the age structure of t population; give to those who are born a better chance in life; and, the longer run, slow down the rate of growth in the number of peop needing jobs, so that the strategy of development can be switched fro one of more jobs to one of better jobs for that labour force.

16. To state the obvious, a population policy for Mauritius must concerned with the dynamics of population growth and not with th absolute levels of population. This does not mean that, in the Mauritia context, the sheer size of the population is of no importance. The densit of population already reached, in relation to an already high technologica level of crop production, necessitates a shift in the structure of th economy from a predominantly agricultural to a predominantly industria economy. The size of the population in an industrial economy is an impor tant factor, on a small island, in determining how habitable that islan is going to be.

17. The drastic decline in age specific fertility rates that has take place over the last five or six years is evidence that rates of populatio growth in Mauritius are the result of individual decisions by intelligen beings who are by and large aware of the consequences of their ow actions. It is perfectly realistic, therefore, to devise a rational populatio policy for the island, if that policy is translated into terms which ar meaningful for the people who have to carry out that policy.

C. Population Targets

18. There is a consensus of opinion in Mauritius that the rate o increase in the population will need to be further curtailed—drastically—i the next generation of Mauritians are to have a future to look forward to

19. The Gross Reproduction Rate* has been cut from three in the mid-sixties to two at the end of the decade. That is to say that the pattern of births indicates that, on average, women in Mauritius can be expecte to have two girl babies in the course of their reproductive lives, or fou children in all by the time they are through with child-bearing. Sinc the Gross Reproduction Rate is the sum of the age-specific fertility rates it will be most meaningful to express population policy quantitatively in terms of a target for a reduction in the Gross Reproduction Rate.

20. It will be Government policy to effect measures to encourage the people of Mauritius to reduce the Gross Reproduction Rate from 1.92 in 1969 to 1.20 between 1980 and 1985. This would mean that by the early 1980's the women of Mauritius would produce 2.4 children on average in the course of their child-bearing life, or *grosso modo* between two and

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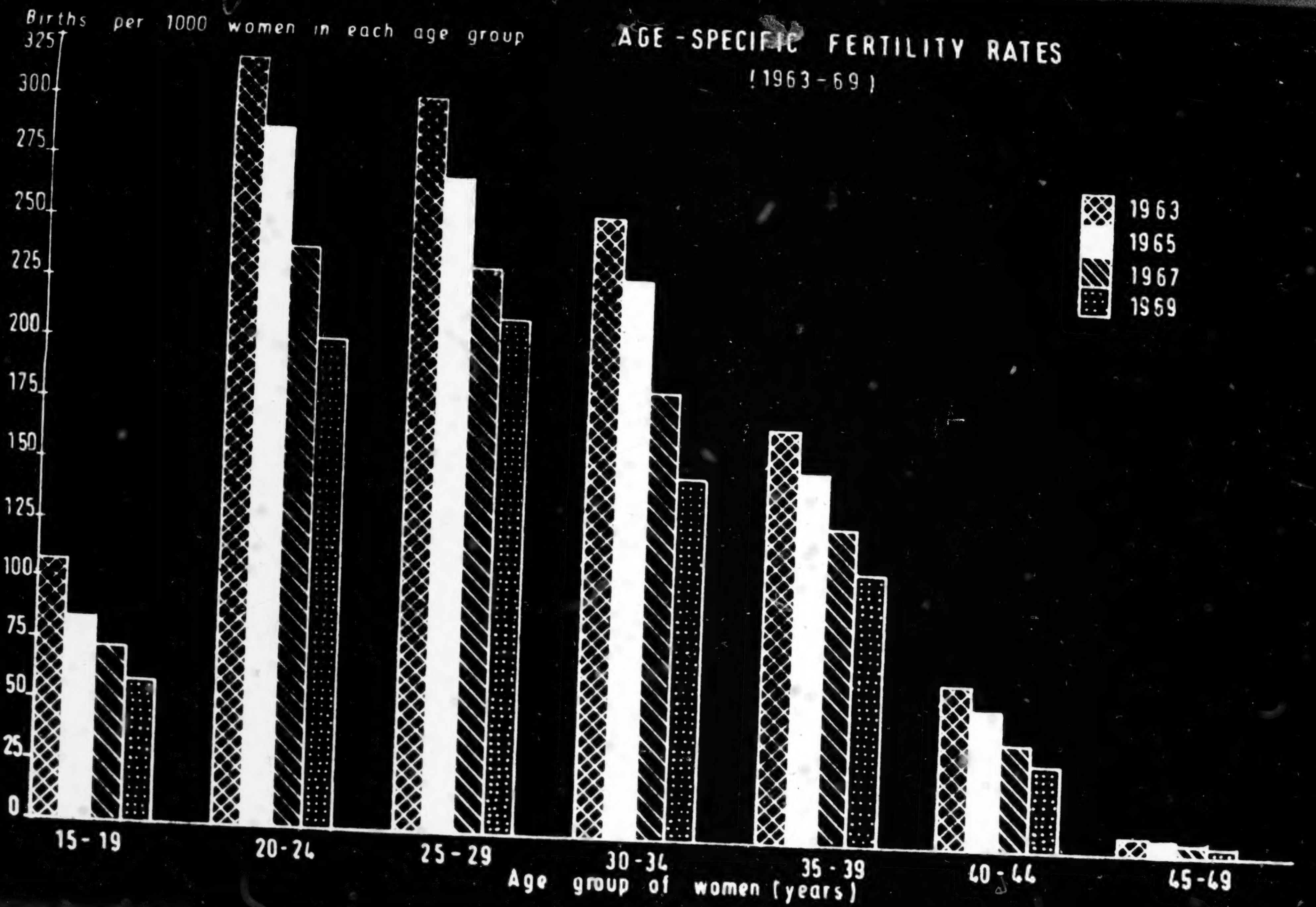
*The average number of daughters born to a hypothetical cohort of women subjected current age specific fertility rates throughout their childbearing years.


AGE - SPECIFIC FERTILITY RATES
(1963 - 69)
Births per 1000 women in each age group
325
300
275
250
225
200
175
150
125
100
75
50
25
0
15 - 19
20 - 24
25 - 29
30 - 34
35 - 39
40 - 44
45 - 49
Age group of women (years)
1963
1965
1967
1969

three. This would be slightly below the Gross Reproduction Rate in the United Kingdom at the present time. In view of the technical means available for achieving such a reduction and of the proven capacity of the people of Mauritius for making intelligent decisions in this respect, this is by no means an unrealistic target. The changes needed in age specific fertility rates, compared with the changes that have already taken place in the past few years, to achieve this reduction in the Gross Reproduction Rate are shown in the table below:—

Age of Mother	*Age-specific Fertility Rates (births per thousand of the female population in each age group)*		
	1963	*1969*	*1983*
15–19	108.5	65.3	29.0
20–24	318.9	203.6	133.3
25–29	304.2	214.3	154.0
30–34	257.4	150.8	103.8
35–39	172.6	113.8	54.1
40–44	68.8	37.1	16.7
45–49	7.9	4.8	1.0
Gross reproduction rate ...	3.04	1.92	1.20
Crude birth rate ...	40.10	27.20	22.50

21. This would mean that the crude birth rate—the number of babies born as a proportion to the total size of the population—which peaked at 50 per thousand in 1950 and has been brought down from a level of 40 per thousand around 1960 to 27 per thousand in 1969 would be further reduced to 22½ per thousand in the early 1980's.

22. Mortality at all ages can be expected to be further reduced, though less dramatically than in the late forties and the fifties. Life expectancy at age zero has increased from around fifty years at the beginning of the fifties to around sixty years at the beginning of the sixties. It can be expected, on present trends, to increase to about seventy years by the early eighties. Given the age composition of the population, this would reduce the crude death rate—which has been below 10 per thousand over the past ten years—to as little as six per thousand.

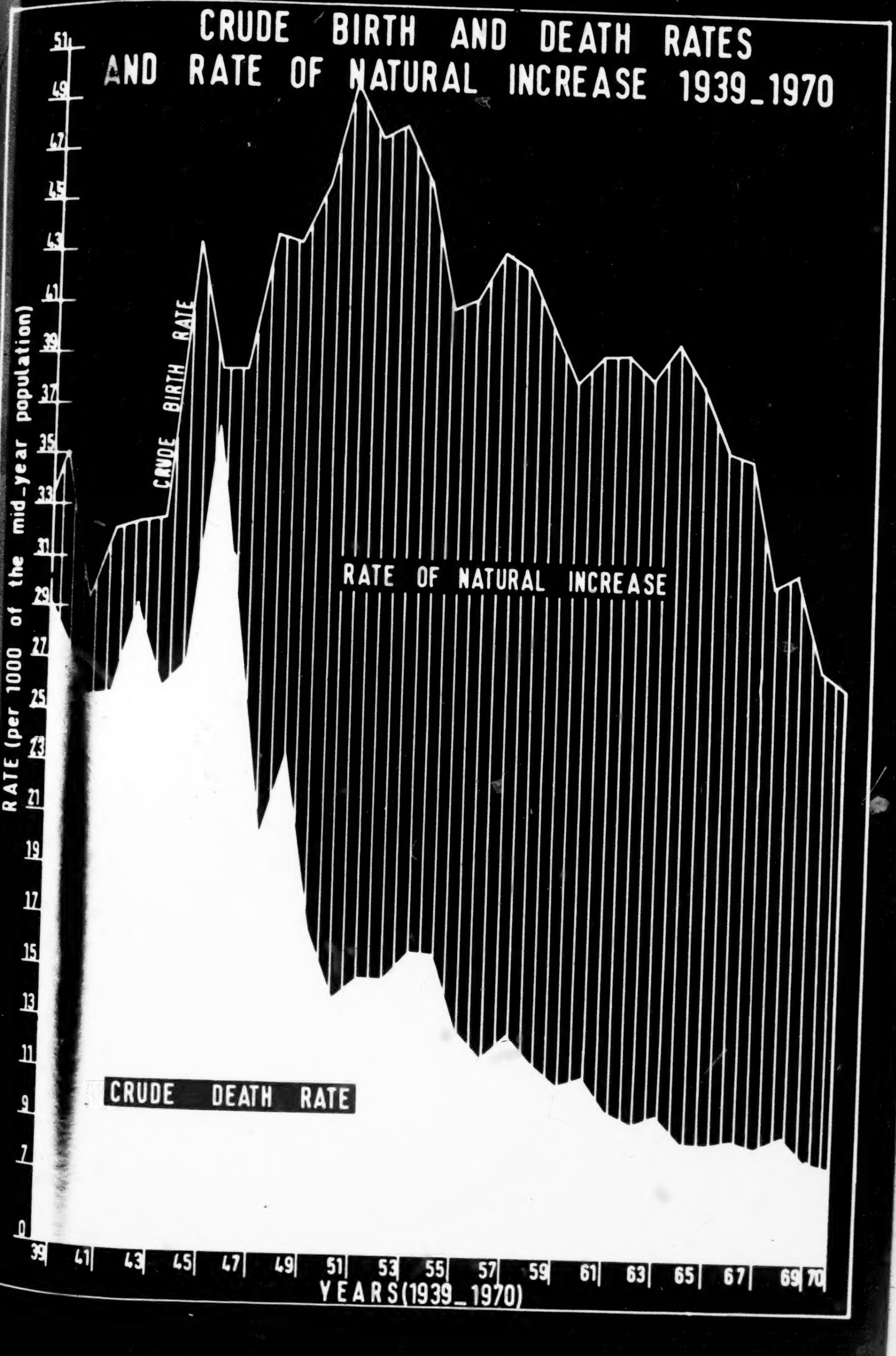
23. The rate of growth in the population can therefore be expected to be between 1.6 per cent and 1.7 per cent a year in the early 1980's, even if fertility is brought down, for each age group, to levels comparable to those in highly industrialised countries. In terms of the total size of the population, the policies outlined above would result in a population by 1980 of 980,000 and of 1,071,000 by 1985.

24. There is no need, however, nor is it helpful, to take an alarmist view of the population situation in Mauritius. Certain aspects of population growth in Mauritius over the next decade or two will have to be lived with, since the events responsible for that growth have already happened. The events of the last few years have, however, shown that population growth can, in Mauritius, be decelerated quite rapidly. Some of the positive effects of a reduction in fertility take a number of decades to work themselves out. Others, such as the proportion of young children who need to be cared for and educated in order to get the best out of life, are much more immediate.

D. Implementing Population Policies

25. A population policy can only be effective if it is meaningful to those who have to take the decisions in the matter of how many children they are to have and if they have the means and the know-how to exercise this decision. With the assistance of the U.N. Fund for Population Activities, Government will make the means and know-how more widely available to enable the people of Mauritius to take intelligent decisions in this matter. The people of Mauritius are capable of acting in their own interests and those of their children. They will not take actions, or refrain from actions, simply because the public interest demands it. The encouragement to the people who will need to carry out Government's population policy, that is to say the prospective fathers and mothers of the next generation of Mauritians, will not therefore be through exhorting people to act in the national interest, but through opening up economic opportunities for the future generation instead of dishing out relief.

26. Social welfare for the needy, among whom those with families in excess of the earning capacity of the breadwinners figure prominently, will continue to be a concern of the State. This will, however, have to take a lower priority as compared with the creation of economic opportunities. To be meaningful to those who will have to implement the population policy which has been expressed in quantitative terms in the above paragraphs, that is to say, the mass of the population of Mauritius, these economic opportunities will need to be available to the population at large. Hence a population policy cannot be independent of a strategy for the economic and social development of the Island as a whole.



CRUDE BIRTH AND DEATH RATES AND RATE OF NATURAL INCREASE 1939_1970

APPENDIX

EXPECTANCY OF LIFE AT BIRTH

Period	*Males*	*Females*
1942–46*	32.2	33.8
1951–53*	49.8	52.3
1961–63	58.7	61.9

DE FACTO POPULATION ENUMERATED AT EACH CENSUS IN MAURITIUS 1851–1962

Year	*Population Enumerated at Each Census*	*Intercensal Increase*	*Average Annual Rate of Increase*
1846	158,462	—	%
1851	180,823	22,361	2.55
1861	310,050	129,227	5.87
1871	316,042	5,992	0.19
1881	359,874	43,832	1.31
1891	370,588	10,714	0.29
1901	371,023	435	0.01
1911	368,791	– 2,232	– 0.06
1921	376,485	7,694	0.21
1931	393,238	16,753	0.44
1944	419,185	25,947	0.49
1952	501,415	82,230	2.26
1962	681,619	180,204	3.12

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*excluding the Sino-Mauritian Population.

APPENDIX—*continued*

BIRTH AND DEATH RATES AND RATE OF NATURAL INCREASE IN MAURITIUS 1901–69

(Per Thousand)

Period	*Birth Rate*	*Death Rate*	*Rate of natural increase*
1901–05	36.5	37.6	−1.1
1906–10	35.9	37.5	−1.6
1911–15	38.0	34.7	3.3
1916–20	34.7	38.1	−3.4
1921–25	39.0	31.0	8.0
1926–30	35.5	28.9	6.6
1931–35	31.1	30.3	0.8
1936–40	33.1	27.7	5.4
1941	32.2	25.6	6.6
1942	32.5	29.2	3.3
1943	32.6	25.9	6.7
1944	43.4	27.1	16.3
1945	38.4	36.1	2.3
1946	38.4	29.5	8.9
1947	43.7	20.1	23.6
1948	43.4	23.8	19.6
1949	45.6	16.6	29.0
1950	49.7	13.9	35.8
1951	47.5	14.9	32.6
1952	48.1	14.8	33.3
1953	46.3	16.1	30.2
1954	40.9	15.8	25.1
1955	41.4	12.8	28.6
1956	43.3	11.7	31.6
1957	42.6	12.8	29.8
1958	40.4	11.7	28.7
1959	38.1	10.8	27.3
1960	39.3	11.2	28.1
1961	39.4	9.8	29.6
1962	38.5	9.3	29.2
1963	39.9	9.6	30.3
1964	38.1	8.6	29.5
1965	35.5	8.6	26.9
1966	35.3	8.8	26.5
1967	30.4	8.5	21.9
1968	31.0	9.0	22.0
1969	27.2	8.0	19.2

APPENDIX—*continued*

INFANT MORTALITY RATES* 1932–69 FOR THE TOTAL POPULATION OF MAURITIUS

(Per Thousand)

Year		*Rate*	*Year*		*Rate*
1932	...	159.0	1951	...	83.5
1933	...	131.0	1952	...	80.8
1934	...	129.8	1953	...	93.5
1935	...	139.4	1954	...	81.1
1936	...	142.3	1955	...	67.2
1937	...	154.5	1956	...	66.0
1938	...	162.5	1957	...	75.1
1939	...	157.5	1958	...	67.4
1940	...	162.0	1959	...	62.5
1941	...	134.8	1960	...	69.5
1942	...	163.4	1961	...	62.0
1943	...	141.6	1962	...	60.1
1944	...	141.0	1963	...	59.3
1945	...	188.0[†]	1964	...	56.7
1946	...	145.2	1965	...	64.1
1947	...	113.9	1966	...	64.2
1948	...	186.2[‡]	1967	...	70.5
1949	...	91.0	1968	...	69.1
1950	...	76.3	1969	...	70.4

AVERAGE AGE SPECIFIC DEATH RATES (PER THOUSAND) MAURITIUS 1920–1963

Age Group		*Period* *1920–1922*	*1930–1932*	*1943–1945*	*1951–1953*	*1961–1963*
			Males			
1–4	...	43.5	48.9	24.9	13.7	7.6
5–9	...	9.9	10.9	6.2	2.1	1.4
10–14	...	11.6	10.2	4.1	1.3	1.0
15–19	...	14.1	11.9	8.9	2.7	1.3
20–24	...	20.1	18.5	16.7	4.3	2.0
25–34	...	19.8	20.9	19.5	5.3	2.5
35–44	...	32.4	33.0	28.3	10.3	5.3
45–54	...	49.5	49.3	48.4	22.8	13.5
55 & Over		120.5	114.5	107.0	62.9	49.7
			Females			
1–4	...	50.4	58.3	26.4	16.1	8.7
5–9	...	11.3	12.9	6.0	2.6	1.7
10–14	...	13.3	11.4	4.5	2.2	0.9
15–19	...	15.8	15.6	12.1	3.8	2.0
20–24	...	25.3	23.4	21.6	5.7	3.6
25–34	...	21.5	22.2	20.2	7.4	3.6
35–44	...	27.8	25.4	21.1	7.8	5.0
45–54	...	32.7	32.4	27.9	12.8	7.9
55 & Over		89.8	88.8	78.9	48.7	41.7

*Number of deaths of children under 1 year of age per 1,000 registered live-births

[†] Poliomyelitis and dysentry epidemics

[‡] Epidemic of whooping cough

APPENDIX—*continued*

AGE STRUCTURE OF THE POPULATION OF MAURITIUS AS ENUMERATED AT EACH CENSUS 1944–62 AND AS PROJECTED† FOR 1980—UNITED KINGDOM 1961

Age Group (Years)	MAURITIUS *1944*	*1952*	*1962*	*1980†*	UNITED KINGDOM *1961*
			%		
Under 15	35.1	40.2	45.3	33.0	22.9
15–64	61.9	56.6	51.5	62.9	65.2
65 and over	3.0	3.2	3.2	4.1	11.9
All Ages ...	100.0	100.0	100.0	100.0	100.0
Dependency Ratio*	618	767	943	681	534

PROJECTION† OF THE POPULATION OF MAURITIUS BY BROAD AGE GROUP 1970–1980

Age Group	*1967* (estimated)	*1970*	*1975*	*1980*
		Thousands		
Under 15 ...	338.6	336.4	332.1	323.7
15–64 ...	412.1	448.7	528.9	615.9
65 and Over ...	27.0	30.4	33.5	40.1
All Ages ...	777.7	815.5	894.5	979.7

Base : 1962 Population census corrected single year of age data allowing underenumeration of young children.

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*Number of persons below age 15 and aged 65 and over per 1,000 persons in the economical active age group 15–64.

†Assumptions

Period	*Mortality* Values of e_0^0 (both sexes)	*Fertility* Gross Reproduction Rate	*Migration*
1970–75 ...	65.65	1.71	None
1975–80 ...	67.67	1.41	
1980–85 ...	69.31	1.20	

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e_0^0 = average expectancy of life at birth

APPENDIX—*continued*

RECENT FERTILITY TRENDS IN MAURITIUS 1965–1969

	1965	*1966*	*1967*	*1968*	*1969*
Crude birth rate	35.5	35.3	30.4	31.0	27.2
General fertility rate *(a)*	163.8	160.3	136.3	136.6	117.8
Age-specific birth rates *(b)*					
Age of Women					
15–19	85.1	84.3	73.8	72.9	65.3
20–24	290.0	283.7	242.3	239.4	203.6
25–29	272.1	279.5	235.4	245.7	214.3
30–34	231.9	221.8	185.8	179.3	150.8
35–39	154.0	154.9	132.4	129.8	113.8
40–44	57.8	58.5	45.8	46.5	37.1
45–49	7.3	7.6	6.6	7.8	4.8
Gross reproduction rate *(c)*	2.72	2.70	2.24	2.27	1.92

(a) Births per 1,000 women aged 15—49 years

(b) Births per 1,000 women in each age group

(c) The average number of daughters born to a hypothetical cohort of women subjected to current age specific fertility rates throughout their child-bearing years.

CHAPTER VIII

EDUCATION, TRAINING AND MANPOWER

A. General

The most important resource of Mauritius is its manpower. A well-motivated labour force possessing the requisite mental and physical skills for a modern economy is the most valuable national asset. While the cultural background and progress of education in Mauritius has provided the basis for an intelligent and adaptable labour force, there is a need to create the skills required to meet the demand generated by prospective economic development. This would require a change in the quality and content of education from its present generally academic emphasis to a more technical and vocational orientation at all levels.

2. General education provides basic intellectual discipline for training, and technical training provides experience in the application of these disciplines to specific vocations or occupations. It is essential that school education is broadly based and prepares young people for vocational training, but it should not attempt to be a substitute for on-the-job training which is so essential for industry. Vocational education and technical education have responsible roles in Mauritius, not merely as a preparation for those who will obtain employment in industry, but for those who will be able by their own initiative and energy to create employment through self-employment or through developing small scale industry.

3. Technical education, if properly integrated into the life of a nation, can make a big contribution to the growth of its economy within the span of a generation. Technical education should, therefore, develop capacity for understanding, judgment, self-expression and adaptation. Technical subjects such as everyday technology can be included in general secondary school education and not restricted to those schools which are specifically named technical or vocational schools. The school laboratory is a place of problem-solving and discovery and should be equipped with simple workshop facilities including basic hand tools. Some secondary schools in Mauritius are aware of this need and should be encouraged.

4. In changing the quality and content of education, teacher training assumes a vital role. Teachers must be trained in the art of teaching everyday science and technology.

B. Objectives

5. In the light of the direction that development is to take in Mauritius, basic education at the primary and secondary levels will be directed towards the following objectives:

(*a*) Free education for all children at the first level (primary);

(*b*) Opportunity for secondary and vocational training for at least 60 per cent of the boys in the age group 15-19 by 1980;

(*c*) A balanced curriculum which will include technical subjects and integrated science at all levels;

(*d*) Technical and vocational orientation of education at the secondary and post-secondary levels;

(*e*) Equality of educational opportunity for all according to their educational potential.

C. Primary Education

6. Government opened its first primary school in 1823. There are at present 176 Government and 50 aided primary schools on the Island. There is also a number of unaided private schools (106 in 1969). The aided schools are subject to the control of the Ministry of Education and Cultural Affairs but are administered by the Education Authority to which they belong, viz. the Roman Catholic and the Hindu Education Authorities.

7. In 1970, the enrolment in all primary schools (Mauritius only) was 148,093 as at October. This accounted for about 90 per cent of the school age population. 71 per cent (105,309) of the pupils were in the 176 Government Schools, 25 per cent (36,784) were enrolled in the 50 schools sponsored by religious bodies whose teachers are paid by Government, and 4 per cent (approximately 6,000) were attending the 106 private schools which received no aid from Government. Promotion from grade to grade is automatic and the drop-out rate is low—less than 1 per cent of enrolment from Standard I to II in 1969 and approximately 2½ per cent from Standard IV to V in the same year. Many pupils take two years to complete the VI Standard.

8. In 1970, there were 30,975 pupils enrolled in the VI Standard and scholarship classes of Government and aided primary schools—12,423 of whom were repeaters and scholarship pupils—27,968 candidates sat for the primary school leaving certificate examination, and 15,280 passed. In addition there were 5,309 private candidates who took the same examination and 3,285 were successful. Many of those who failed for the first time could repeat the next year, and those who failed a second attempt were at the end of their formal schooling.

9. To accommodate primary school pupils in 1970, there were 2,771 classes in Government schools of which 670 classes were in rented buildings used for Government schools. An additional 943 classes were provided

by schools operated by religious organizations (aided schools), giving a total of 3,714 primary school classes. 375 classes were being used on a two session (double shift) basis (which mean that there were two sets of teachers for these classes, one for pupils attending in the morning and another for an afternoon session); there was a total of 4,393 permanent teachers plus 229 temporary teachers (including extra teaching assistants). The permanent teacher—pupil ratio was therefore 38:1 (excluding Oriental language teachers), or 31:1 counting the temporary teachers and the Oriental language teachers.

10. The total allocation for Government primary schools of Rs 23.2 million divided by the enrolment of 142,478 gives an average cost per pupil of Rs 162 for the 1970 calendar year. Approximately 92 per cent of the total goes for teachers' salaries including temporary assistants, and 1.7 per cent provides for books and other requisites. Maintenance gets an allocation of about 1.8 per cent, and school feeding requires over 3 per cent. The 1970/71 budget estimate for primary education is approximately Rs 23.9 million, which is over two-thirds of the Government's budget for education.

11. Primary education in general is oriented toward examinations administered at the end of Standard VI. Recently, at the initial and middle stage, primary education has undergone some change in methodology attempting to bring it in line with the local context and with modern concepts. Costs of creating learning situations in which most pupils will gain a mastery of the basic knowledge, understanding and skills for lifelong requirements including a foundation for the next level of education and training do not seem to be provided for adequately. Similarly, children whose school experience is compacted into a 3½ hours a day (2 hours less than normal) have less opportunity for learning and this may be harmful after the age of 7. Some parents pay Rs 10 to 15 monthly, especially for pupils in the fifth and sixth standards, for their children to receive private tuition.

12. Of the 16,775 primary school leavers who completed the sixth standard in 1969, 320 (1.9 per cent) were admitted into the three prestigious Government secondary schools which produce most of the students who later qualify for university admission and preparation for the professions. 73 (0.4 per cent) more entered the John Kennedy College where they have the opportunity to pursue a technical course leading to employment in wood or metal working occupations, or to employment as typist, stenographer or secretary. 140 (0.8 per cent) were admitted to the three Senior Primary Schools where boys have the opportunity to learn wood and metalwork at an introductory level, and where girls can learn the fundamentals of needlework and cookery along with other basic domestic science skills. All students in these schools also take basic academic courses including general science.

13. The remainder of primary school leavers, if they can afford to pay monthly fees of at least Rs 12 to 20, seek admission to private secondary schools (colleges) where most of them have little choice but to begin to learn the answers for the Cambridge School Certificate examination. In 1970, 9,611 (57.3 per cent) of the primary school leavers found places in the secondary and senior primary schools and 7,164 (42.7 per cent) did not.

14. Without going on to secondary school, a primary school leaver with certificate, when he becomes old enough to be employed, would find his qualifications sufficient only for unskilled work paying in the range of Rs 100 to 150 per month. Virtually no primary school leaver, with or without a certificate, would be expected to have learned at school a basic knowledge of elementary science principles or its applied forms in the fields of health, nutrition, human reproduction, or of mechanical and electrical apparatus. Knowledge of the history, culture and traditions of Mauritius would also be rare.

D. Secondary Education

15. Secondary education in Mauritius is mainly directed towards academic studies leading to higher education, apart from the John Kennedy College, opened in 1965, which offers a broad based common course of academic subjects in Forms I and II and a choice of scientific, technical or commercial subjects from Form III upwards.

16. The four state secondary schools—the Royal College (Curepipe), the Royal College (Port Louis), the John Kennedy College for boys and the Queen Elizabeth College for girls—provide a seven-year course up to the Cambridge Higher School Certificate.

17. There are at present thirteen grant-aided secondary schools. They comprise eight schools for girls (of which six run by the Loreto Order), four schools for boys and one co-educational college. These schools provide either a five-year course up to the Cambridge School Certificate level or a seven-year course up to the Cambridge Higher School Certificate level. In addition there are 125 non-aided private secondary schools.

18. The expansion of secondary education may be assessed from the following enrolment data:

Type of School	*Number of Pupils on Roll*				
	1947	*1957*	*1967*	*1969*	*1970 (1st Term)*
Government ...	528	1,152	2,505	2,616	2,805
Aided ...	1,774	2,256	6,218	7,003	7,164
Non-aided ...	3,482	9,198	29,785	32,825	35,152
	5,784	12,606	38,508	42,444	45,121

19. Secondary education is oriented principally around five sets of examinations, all of which are written in English and prepared in the U.K. but have ***not yet*** undergone the sort of modernization to which examinations elsewhere have already been submitted. These are the General Certificate of Education of London University, at either the ordinary ("O") level or the advanced ("A") level; the Cambridge School Certificate (taken at the end of five years), and the Cambridge Higher School Certificate (taken at the end of seven yars); and the Qualifying Test in English (required of students under certain conditions as a prerequisite to sitting for the Cambridge School Certificate Examination).

20. For most secondary level students, passing one or more of these examinations marks the end of their schooling and the start of their employment or search for jobs. A School Certificate has been thought of in the past as a "passport" to a better paying job, often a position in the civil service or in secondary school teaching. As of 1970, less than 10 per cent of the output of secondary schools (about 800—including about 280 scholarship winners) proceeded to higher education at the tertiary level.

21. By the pragmatic standard of admission to university standing and subsequent achievement at the level aimed at, Mauritian secondary schools appear to be satisfactory. Few students return home owing to academic deficiencies. By similar standards, secondary schools which produce certificate holders acceptable for civil appointments apparently meet most of the existing requirements. For numerous employers in the private sector, the intelligence and academic skills of secondary school leaving certificate holders are said to be adequate. The majority of such jobs can be described as clerical and administrative in nature. Much that is done involves verbal and written communication and the processing of documentation of various forms.

22. For a development plan aimed at decreasing the present and anticipated level of unemployment, the problems of secondary education as it exists include the following:

- (i) It is generally biased in favour of what it has been doing in the past to the detriment of evolving types of education required to meet the needs of the future;
- (ii) it is not disposed toward innovation and change from traditional patterns and procedures;
- (iii) it is geared to the production of a small minority of a certain type and of a majority for whom their years of secondary education result in little benefit either to themselves or to the economy. The reasons for this are not difficult to find.

23. First, educators associated with the schools which traditionally produce a high percentage of students who pass the examinations for which they sit know that many (if not the majority) of these students secure opportunity for further study or employment with which they are

relatively well satisfied. The mark of this satisfaction is the widespread demand by parents for similar educational opportunity for succeeding generations of students. Second, innovation and change are—or appear to be—costly, complicated, and difficult. Teachers have to be found or trained, educational administrators have to learn to cope with new curricula, facilities and/or equipment have to be adapted or provided, educational supplies and materials including new textual materials have to be provided, and students and their parents have to be persuaded that new courses of study will lead to equal or better employment opportunities at school leaving time. Third, technical work—especially if it *appears* to be more manual than intellectual—tends to have less prestige value and to bring lower rates of remuneration. Middle level technical work tends to be viewed as a poor alternative to " office work ".

24. There are 142 secondary schools which provide the acceptable type of traditional educational opportunity which is still in demand. These include the three government colleges and 77 per cent of the enrolment of the John Kennedy College, plus 90 recognized private schools (colleges) in 1970. Thirteen of the recognized colleges are aided by government grants and provide for 7,164 (15.7 per cent) of the secondary enrolment, and 77 are not government aided beyond the possible provision of one or two university graduates per school as teachers for whom the government pays 33.3 per cent of their salary.

25. The following table gives the enrolment in the secondary schools in 1970:

Type of School	*Number of Schools*	*Enrolment 1970 (first term)*	*% Enrolment*
Govt. (incl. John Kennedy ...	4	2,805	6.2
Aided Schools	13	7,164	15.7
Other recognized private Schools	77	29,697	65.3
Non-recognized private Schools	48	5,455	12.0
Senior Primary Schools ...	3	385	0.8
	145	45,506	100 0

26. The recognized private schools accommodate *36,861* students or 81 per cent) of the total enrolment, leaving to *48* " non-recognized schools " the responsibility to provide such educational opportunity as they can to *5,455* students or 12 per cent of the total secondary enrolment. The three senior primary schools provide three years of secondary education to 385 students (0.8 per cent of the total) who may enter an apprenticeship Scheme at age 16 but who tend to transfer into a secondary school to qualify for a regular examination.

27. The drop-out rate for government secondary schools ranges from about 5 per cent to a negative figure (representing transfers in from other schools). The student-teacher ratio is 18:1, and the average annual cost

per student was Rs 950 in 1970 (excluding the cost of examinations). From a fifth Form enrolment of 471, there were 438 examination passes, and from a sixth Form second year enrolment of 363 there were 249 examination passes in 1969. The pass rate for the fifth Form was over 93 per cent for boys and over 91 per cent for girls, while for the H.S.C. it was nearly 69 per cent for boys and girls. The ratio of qualified approved graduate level teachers to teachers who have qualified at the secondary level is about 5 to 1 in these government schools.

28. For private secondary schools which are aided by government grants, the drop-out rate is somewhat more varied—ranging from a high of 16 per cent for boys promoted into Form II in 1968 to negative numbers in many cases (reflecting transfers in, as with government schools). The student teacher ratio for these schools is 24:1, and the average annual cost per student is estimated to be in the range of Rs 600 or roughly Rs 100 per student more than income from fees and government grants. From a Form V enrolment of 1,100 there were 838 examination passes in 1969 for a pass rate of 72 per cent for boys and 80 per cent for girls. From a Form VI second year enrolment of 377 there were 193 passes in 1969 for a pass rate of 47 per cent for boys and 56 per cent for girls. The ratio of qualified approved graduate teachers to teachers qualified at the secondary level was about 2 to 3, and some staff members were either uncertificated at the secondary level or had not completed their own secondary level training (compared with none at these levels in government schools).

29. For private secondary schools receiving no grants in aid, the drop-out rate is approximately 20 per cent for Forms I and II, but transfers—in tend to be greater than drop-outs for the higher forms. The student teacher ratio for these schools averages out to about 28:1, and the average annual cost per student is estimated to be in the range of Rs 150 to Rs 250 in the better schools. From a Form V enrolment of 4,973 boys in 1969 there were 1,801 passes for a 36 per cent pass rate and for an enrolment of 2,212 girls there were 601 passes for a 27 per cent pass rate. Very few of these schools provide studies at Form VI level, but for an enrolment of 213 in 1969 there were 66 passes for a rate of about 30 per cent. The ratio of qualified graduate teachers to teachers qualified only at the secondary level was about 1.5 to 5, and the majority of teachers were uncertificated (about one third of whom had not completed a secondary school course) according to the 1969 data.

30. On an overall basis, although the drop-out rate from Form I to Form V is low the per cent of passes at Form V level is generally less than 50 per cent (38 per cent for 6,534 boys and 41 per cent for 2,83 girls in 1969). For the second year of Form VI the rate was above 5 per cent for a much smaller total, giving about 500 H.S.C. passes out of 850 candidates in 1969, as compared with 3,678 passes out of 9,36 candidates at the S.C. level.

31. About 60 per cent of those who sit for the Form V level examination, or roughly 5,000 persons at the 1969 rate, fail to pass. With respect to the unemployment problem, these are probably people with a sense of failure and with virtually no basis in their educational experience for re-education and training in alternative lines of productive work. The basis for such alternatives was not provided at any level of their education up to the point of their leaving school, unless they were in the small minority which happened to be exposed to some training in manual skills.

E. Teacher Training for Primary Schools

32. The existing training capacity for primary school teachers at the Teachers' Training College is roughly 250 per year for a 2-year course. Trainees are admitted at a minimum level of a pass at the Cambridge School Certificate level and a pass on a special examination for candidates. Each trainee receives a stipend of Rs 203 per month for the two years, and after receiving his certification he remains on probationary status for 2 years at a monthly rate of Rs 250.

33. All certificated teachers go into the government or aided schools. Private (non-aided) schools (which accommodate about 6,000 of the enrolment) have no means for teacher training. To provide for this lacuna, a scheme for opening up the Teachers' Training College Course to private paying students sponsored by the private sector is being considered. Approximately 50 per cent of the output of the Teachers' Training College is for replacements of teachers who retire or leave the profession for other reasons and 50 per cent (125) fill new positions created by new school construction or the opening of additional rented classrooms. For 1970, this supply of new certificated teachers amounted to 50 per cent of the total requirement for new teachers. The difference between need and supply was filled with temporary staff: either student teachers, teaching assistants, or untrained and under-qualified temporary teachers.

34. Owing to the relatively low rate of remuneration, primary school teaching tends to be unattractive to better students. The product of the TTC is therefore qualitatively uneven. One certified teacher may be characterized by dedication and high resolve to serve the nation's children and another may think of his work as a temporary alternative to unemployment which will suffice until he can improve his status and income. There is no empirical data on the distribution of characteristics of newly certificated teachers, but it is not unreasonable to assume that perhaps half of the TTC output is qualified to teach only in the manner in which they themselves were taught. Only a portion of the output have the competence to successfully apply new methods or interest in cultivating the attitude for change which the new development policy demands. Steps should be taken to ensure that full use is made of Teachers' Training College trained staff for the purpose of demonstrations in the two schools

attached to the Teachers' Training College and for experimenting with and supervising new pilot schemes in the teaching of subjects relevant to the economy, e.g. elementary science and everyday technology. The Tutorial System should be more fully developed.

There would, however, be a need for providing more adequate facilities e.g. language laboratory, elementary science-laboratory, maths workshop etc. where trainees can get involved in modern practices. These facilities should be provided urgently if student teachers are to be trained in the methods called for by this development plan.

35. The present TTC programme represents a cost of approximately Rs 1.5 million or 16.3 per cent of the total budget for secondary and higher education. The per trainee cost is therefore approximately Rs 6,000 per year or Rs 12,000 per person for the two-year course. This may be compared to the University of Mauritius' cost for training an agricultural expert at the B.Sc. level of roughly Rs 5,000 per year.

F. Policies and Programmes

36. The whole system of primary and secondary education in Mauritius needs a thorough and detailed review in order to change it adequately to fit in the future needs of the economy and for developing the most important resource of the country-manpower. It is therefore planned to invite international experts to look further into the details of changes that must be made in the educational system. These experts will work in close co-operation with Government Ministries and submit recommendations to the Government.

(i) PRIMARY EDUCATION

37. As 90 per cent of the primary school-age children already attend schools, capital requirements for classrooms will only be for replacement of rented facilities and for ending the double shift system. The programme for the construction of such classrooms has been included under the T-P-T programme.

38. Growth in the population will become a factor in the construction programme only by the end of the decade. As the most important objective in Primary Education is to improve the quality and content of that education, it will be essential to professionalize and improve the quality of the teaching staff by gradually eliminating the use of less than fully qualified teachers and by upgrading qualified teachers. The implication for costs of upgrading is increased rates of remuneration in some form, making it quite clear that the numerical size of the teaching staff must not increase. Natural growth of the budg

must provide for as much qualitative improvement as possible; improvements to the size of classes must largely be brought about through administrative and organizational reforms.

(ii) SECONDARY EDUCATION

39. Increasing the Government responsibility for secondary education is conditioned by recurrent cost implications. It is not considered feasible at this stage of development to make secondary education the sole responsibility of the Government. While Government will construct two new secondary schools during the Plan Period, the major expansion in secondary education must come through the private Secondary Schools. Government, however, has the responsibility for this expansion as well as for improving the quality of education at this level.

40. Apart from the establishment of two new secondary schools, the three existing senior Primary Schools will be extended to a five-year course as well as expanded to accommodate a larger intake.

41. Government proposes to strengthen and improve the quality of educational opportunity provided by private schools through the provision of loans for buildings and equipment to schools which will meet certain criteria in terms of educational standards and orientation of their teaching to meet the needs of the economy.

42. Government will award a larger number of bursaries to pupils who merit the opportunity for secondary education and cannot attend without Government assistance. These grants will initially be limited by the present budgetary constraints but this situation can be eased through a revision of the present scholarship system and the fees structure in the Government Secondary Schools. Those who can afford to pay must pay for the education they get. This possibility will be further investigated by the Government.

(iii) TEACHER TRAINING

43. Requirements for primary teacher training are principally non-monetary inasmuch as they represent changes in attitudes and practices. To a large extent these reflect organizational readjustments and changes in training practices.

44. It is necessary, however, to provide for a new capability in the training of teachers for courses and programmes with a clearcut orientation for everyday technology. Expertise in this regard will have to be brought in from overseas.

45. The two model primary schools attached to the Teachers' Training College will be improved.

46. An Institute of Education, attached to the University and under the general authority of the University but with close association with the Ministry of Education will be established.

47. The Institute of Education will have responsibilities for the following activities:

(i) *Secondary Teacher Training*
At present very few secondary school teachers have any form of professional training—and this at a time when all subjects in the school curriculum are being revised on new lines. The highest qualification of many of the teachers is the Cambridge Overseas Higher School Certificate, an examination that is itself rather remote from the best of modern educational thinking. There is then a need for both academic and professional training.

(ii) The provision of *in-service training courses for teachers*.

(iii) The organising and conducting of *seminars on pedagogical topics*, particularly on methodology and the use of audio-visual learning aids.

(iv) Guidance and advice to the Teachers' Training College in the *training of Primary School Teachers*, particularly on matters of curriculum development, methodology and audio-visual aids, their construction and use. The service would be of particular value in view of the introduction of integrated elementary science.

(v) In co-operation with the Ministry of Education, the Institute will eventually contain the nucleus of a Mauritius *Examination* syndicate with responsibilities for local control of all internal examinations conducted in the primary and secondary schools for selection and promotion of pupils. Since it is the content of the examinations syllabus that largely determine the content of education there is a small hope of reform until examinations come more and more under local control.

(vi) An Institute of Education will be an appropriate body *to help and guide educational mass media programmes* such as educational Radio and Television. In view of the growing importance in Mauritius of educational television the content of the programmes and their presentation will be guided by specialists. Programmers and presenters will be given special training in all the techniques of educational T.V.

(vii) Undertake studies into *curriculum* reform, and the preparation of syllabii, and to make available professional advice to the Ministry of Education and to teachers on these matters.

(viii) The Institute will provide *administrative training for Principals of Secondary Schools, Primary Inspectors, and Head Teachers of both Primary Schools and Secondary Schools*.

(ix) *Research*
Little has so far been done on the special educational needs peculiar to Mauritius, such as language teaching and the particular educational needs of Mauritius in curriculum development

G. Post Secondary Education and Training

48. The main post secondary and training Institute in Mauritius is the University which as at the end of December 1969 had nearly 300 full-time students enrolled as follows:

	No. of Students
School of Agriculture Diploma Course	68
School of Administration :	
A.C.C.A. (Accounting) ...	31
In-service Training (various) ...	166
School of Industrial Technology :	
Diploma in Mechanical and Electrical Engineering ...	24
TOTAL ...	289

49. Through special training programmes provided by the University of Mauritius about 1,000 persons received part-time or short course training. These include 428 participants in short courses and seminars. 400 more in this category attended part-time courses of the School of Administration, including 169 who participated in a course on Local Government. The Centre d'Administration des Entreprises accommodated 14 persons. The School of Industrial Technology during the same period enrolled 106 students, most of them in the diploma programme in Mechanical and Electrical Engineering. 136 students were also enrolled in Agricultural courses such as irrigation.

50. Clearly, the University of Mauritius should be enabled to conduct with adequate levels of Government support the types of training it can conduct efficiently by international standards. No Government funds or scholarship grants will be used for training overseas which can be accomplished as readily in Mauritius. The cost implications of this policy appear to be natural growth of the University's budget within the 1.5 per annum limit, with provision made for the University to collect and retain fees for courses and training activities which it is competent to render beyond what is provided for by the allocation from Government revenues.

51. For further education abroad, Government grants six English Scholarships at an average cost of Rs 21,400 per year per person. In 1969 nearly 300 scholarships, fellowships and bursaries were granted by international organizations, foreign Governments and other organizations. In addition, some 100 students pursue post-secondary studies at their own expense annually.

52. Overseas educational and training opportunities will be rationalized to fit in with the manpower requirements of the development plan. The English Scholarship scheme will be modified to make it better fit modern national needs. It is a significant symbol, the meaning of which should be designed to fit the goals of the development plan.

53. At the technician level, available evidence indicates that the ratio of middle level technical manpower to high level professional manpower is generally low, with the result that high level scientists and engineers are not fully utilized. Moreover, the training of middle level technical manpower (skilled workers, junior technicians and senior technicians) has often been found to be deficient in certain respects by standards applied in more developed areas.

54. Formal technician training, outside the John Kennedy and the Senior Primary Schools, is limited to the Industrial Trade Training Centre at Beau Bassin and the training centres of the small scale industry of the Ministry of Education.

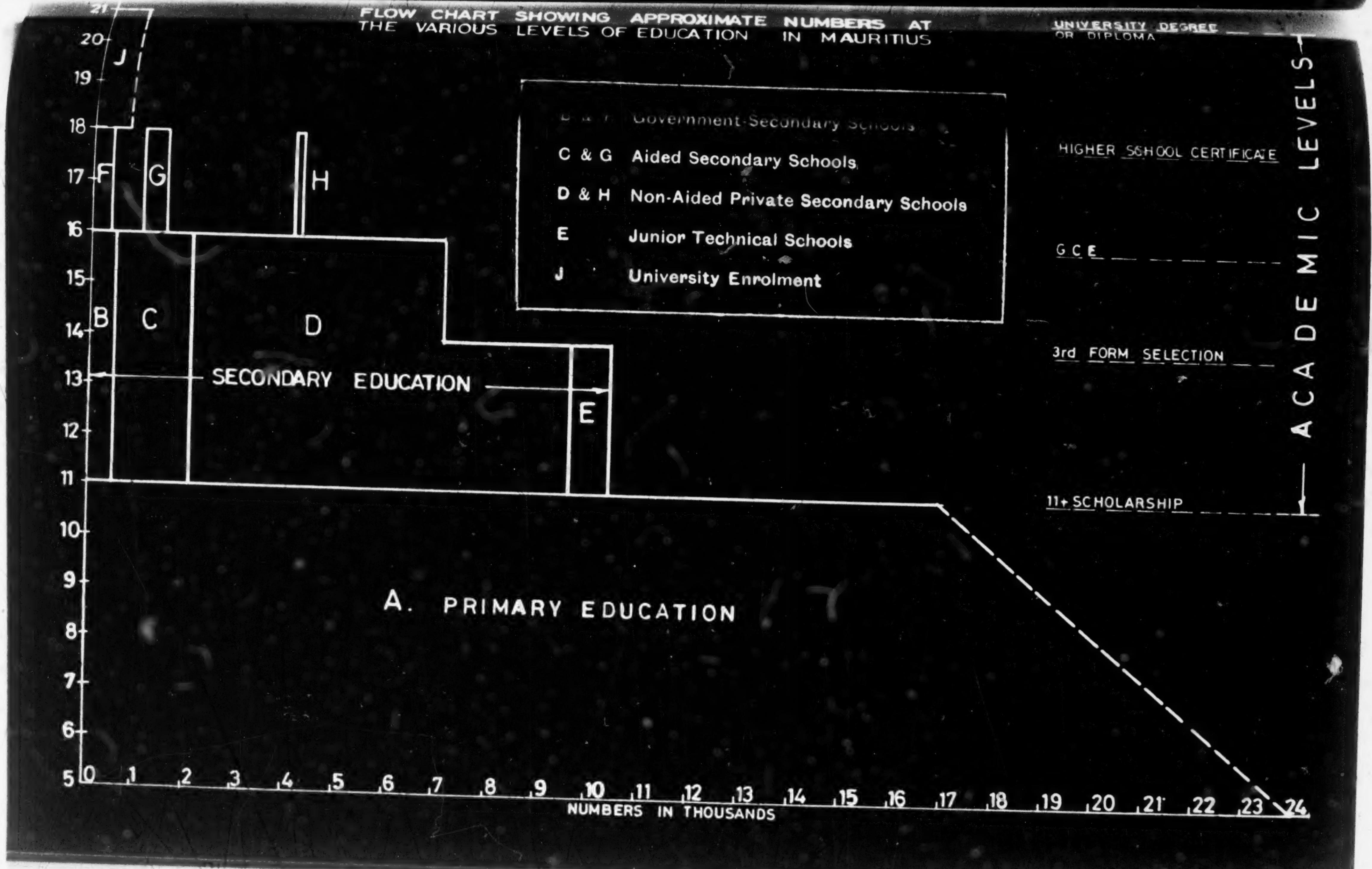
55. At the Industrial Trade Training Centre, 12 trainees in each of seven skilled trades (such as machine shop, automechanics, and electrical installation and maintenance) or 84 per year, are trained up to the City and Guilds level of competence. In addition, the ITTC facilities are used by the University to supplement their workshops, and short courses are provided from time to time for teachers of the Senior Primary Schools. The demands on the programme may grow to at least double the present rate of output, depending upon careful manpower assessments. The additional costs of such expansion will be covered by a fee structure payable by sponsors of trainees.

56. While most of the training in the various sectors of the economy and in administration will be on-the-job training, additional specialized training institutions will be established as the need arises. Apart from the usual training schools in the Government Service like the Nursing Training School, a Sea Training School has been set up recently and a Hotel and Catering Training School will start operating in 1972.

57. Some training in crafts is being carried out at five centres under the aegis of the Ministry of Education. In view of the planned programme for the development of small scale industries, it is important to have a training programme to train not only the craftmen in various trades but also to develop managerial skills for small units. In order to accomplish this objective, an Institute to train people in various crafts and managerial skills will be established in 1971-1972.

Emigration

58. Some 15,000 Mauritians emigrated in the 1960's, equivalent to 2 per cent of the present population. In addition, about a quarter of this number of Mauritians left the Island in the sixties without intending to emigrate and have not yet returned; some of these are permanently



FLOW CHART SHOWING APPROXIMATE NUMBERS AT THE VARIOUS LEVELS OF EDUCATION IN MAURITIUS

settled abroad. Australia and the U.K. are the main countries of emigration for Mauritians.

Number of Emigrants, 1961–1969

Year		*Official Emigrants*
1961	...	837
1962	...	1,083
1963	...	594
1964	...	910
1965	...	1,408
1966	...	1,611
1967	...	2,225
1968	...	3,067
1969	...	2,379

59. The implementation of the planned development programme will require a large number of skilled workers. While some skills are already available within the country, new skills to satisfy the demand generated by the nature and type of development will have to be created. While new capacity to create such skills is being created on an economic basis as a matter of urgency consistent with the requirements, and programmed to supply these skills as the need arises, more efficient use of the already existing skills must also be made.

60. The cost of creating new skills is generally high both to the Government which must provide the basic training facilities and to the industry which has to provide training in specific skills related to the technology and working practices of the individual enterprises. The benefits of this heavy investment must be economically and efficiently used for the over-all development of the economy.

61. Furthermore, the type of activities, particularly in industries which promise to contribute in a major way to the solution of the main problem, requires a reasonable surety in the availability of the skills needed. In fact, the availability of skills and facilities for training, apart from the adaptability of our labour force, will be the main attraction for industries from abroad. Government policy therefore will ensure that maximum benefit is derived from this heavy investment in training facilities.

62. This will have a bearing on the emigration policy. Athough some emigration may be possible, caution will have to be exercised and discriminating measures adopted. Even a modest outflow of skilled manpower would be incompatible with the over-all policy and strategy of development adopted to solve our most pressing problem. In fact a drain of skilled manpower may constitute a distinct disincentive to rapid industrialization. However, until more opportunities become available within the economy, the Government will pursue the policy of helping unemployed persons, particularly unskilled to find work in other countries either on a short term or a long term basis. The Government will therefore through its missions abroad actively explore all possibilities of finding work for those who cannot be gainfully absorbed in the economic activity of the country.

CHAPTER IX

ECONOMIC INFRASTRUCTURE

Harbour and Shipping

A. General

There is one commercial port in Mauritius, the port of Port Louis o the North West Coast.

2. The port, which is an excellent natural harbour where most of th cargo is handled by lighterage, is noteworthy for a number of positiv features: high productivity in cargo handling, good organisation of por administration and cargo handling contractors and a good standard o maintenance of port facilities, equipment and appliances. Port dues an fees are generally reasonable taking into account the volume handled as are the rates charged by private dock, stevedoring and other servic organisations.

3. The administration of the port is the responsibility of a government department—the marine Services—which falls within the portfoli of the Ministry of Communications. Active consideration is being give to the establishment of a Port Authority which will be a statutor corporation under government control.

4. There is an open roadstead with anchorages for vessels of an draft. The main channel is 7,600 feet in length with an average width o 600 feet. Ocean going ships are moored to buoys, laid on each side of th inner part of the channel. The following berths, at mooring buoys varying between 630 and 750 feet in length, are available:

—6 berths capable of taking ships up to 31′ maximum draft
—3 berths do do 29′6″ do
—1 berth do do 25′ do
—3 berths do do 20′ do
—2 berths do do 16′ do
—Very large vessels are berthed in the outer channel at the Quarantine berth.

At present there is only one deep water quay, Quay ' D ', with length of 485 feet and capable of taking vessels up to 580 feet 0/A and maximum draft of 30′6″. A new deep water quay—' West Quay '—will b completed in October 1971. It will have a length of 470 feet and a dept of 35′.

5. Apart from these deep water quays there are: Quay ‘ C ’ with a length of 396 feet and with a depth of 18′ alongside for a length of 310 feet; a special tanker and ship bunkering berth off Fort William on the South side of the harbour with a length of 750 feet and a minimum depth of 32′; one berth off Fort George on the North side of the harbour for ships discharging cement in bulk, with a maximum draft of 20′; a number of landing berths for lighters in the inner harbour.

Thus the berthing facilities for the ocean going traffic are:

One berth for very large vessels;
Ten berths (including Quay “ D ”) for medium-sized vessels;
Six berths (including Quay “ C ”) for small vessels;
The bulk cement berth off Fort George;
The tanker-bunkering berth off Fort William.

To this will be added at the beginning of 1972 one berth for large vessels at the new “ West Quay ”.

6. The following sheds are available:

	Type of Goods	*Capacity*
H.M. Custom's Shed (Quay “ D ”) ...	General cargo	43,350 tons
H.M. Custom's Shed (Customs yard) ...	Mainly fertilizers in bags	18,000 cubic feet
Coaster's Shed	Bagged cargo	450 tons
Cane Shed	Bagged cargo	600 tons
Queen's Warehouse	General cargo	19,000 tons
Granary	Grains and pulses	350,000 bags of 75 kgs.

7. The two private dock companies own and operate storage facilities for export sugar in bags with a total capacity of 240,000 tons.

8. The Marine Services own and operate a good supply of cargo handling equipment, such as:

1 electric crane of 18 tons;
1 mobile crane of 12 to 20 tons;
4 mobile cranes of 4 tons each;
10 mobile cranes of 3-4 tons each

The Marine Services also own and operate an adequate fleet of tugs, lighters and small craft such as one 2,300 HP and two 720 HP tugs which are available for deep sea towage and salvage and are fitted with fire fighting equipment. Three tugs of 320 HP are available for harbour work.

9. Two private dock companies provide lighterage facilities and operate together 179 lighters with a total capacity of 12,900 tons.

10. Bunkers are available at: special tanker berth off Fort Williams; Quay “ D ”; mooring berth No. 5 West; quay in inner harbour for ships with a maximum draft of 15′. In the near future a self-propelled bunkering barge of 500 tons multiproduct capacity will be put into operation. The pumping capacities of the installations are 150-200 tons per hour for furnace oil and 50 tons per hour for marine diesel oil and gas oil.

11. Fresh water is supplied at any berth by 4 barges of 50, 75, 8 and 110 tons respectively. The Municipal supply to the water boats stationed at Chien de Plomb has now fallen to an average of some 4 tons per hour, causing considerable delays in filling the barges. In order to satisfy requirements of large tourist ships commencing to call at Por Louis from December 1971, the water supply company is erecting a water storage tank of 350 tons capacity to meet a supply of 1,500 tons from 7 a.m. to 10 p.m. The Municipal supply will be increased to an average of 70 tons per hour as water supplies to vessels in the harbour are an essential priority service.

12. The ships' repair facilities are ample and almost any type of repairs can be undertaken. Dry docking facilities are available for ships of up to 358.5′ × 50′ with a maximum draft of 16′. The number of vessels docked were: 1967—51; 1968—83; 1969—90; 1970—93.

B. Traffic

13. The number of ships entering the port increased from 250, wit a total net registered tonnage of 800,000 in 1950 to about 400, with a ne registered tonnage of 1.3 million in 1960, and 500 (excluding fishin vessels) with a net registered tonnage of 1.8 million in the mid-sixtie After the closing of the Suez Canal the number of ships entering the harbour almost doubled from one year to the next to over 900 (excludin fishing vessels) with a net registered tonnage of 2.7 million in 1968:

Annual	*Vessels** *Entering* *Port Louis*	*Net Registered Tonnage* *Million Tons*	*Cargo Handled* *Imports*	*Cargo Handled* *Exports*
			Thousand Metric Tons	
1951–55	312	1.11	320	565
1956–60	384	1.34	407	569
1961-65	615	1.70	518	649
1966	757	1.85	463	646
1967	1,100	2.62	594	627
1968	1,365	2.83	583	799
1969	1,415	2.58	615	759
1970	1,198	2.90		

14. 35 per cent of the foreign ships enter the harbour in order t avail themselves of facilities for bunkering, the supply of water and store ships' repairs and for landing sick seamen. In the last three yea 1968-1970, an average of 1,250 foreign vessels, other than warships an research vessels, have called at Port Louis, of which 500 were fishin vessels with an average net registered tonnage of 150. Another 400 wer vessels loading or unloading cargo, with a total net registered tonnage o 1.7 million and 310 called for bunkers and other provisions or services with a total net registered tonnage of one million.

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* excluding Government warships and other government vessels.

15. In recent years an average of 400 foreign and Mauritian ships have entered yearly for the shipment of cargo other than tanker cargo and bulk cement. Besides 55 ships handling full loads of sugar and rice, about 345 ships enter for other cargo amounting yearly to about 300,000 tons. 50 per cent of this cargo consists of bagged goods arriving in fairly large consignments. The average consignment of general cargo, other than bagged goods, is therefore small at present. A further problem is the imbalance between incoming and outgoing freight. Only slightly more than 10 per cent of the above indicated yearly turnover of 300,000 tons (excluding tanker cargo, bulk cement, sugar and rice) consists of exports.

C. Cargo Handling

16. On average, 38 stevedoring gangs together with supporting tally clerks, cleaners and bag carriers, sewer rebaggers, carpenters, riggers and watchmen operate at any one time. This requires a labour force of some 1,197 men. The required number of lighterage and shore gangs operate at the same time. The production rate of this labour force is roughly balanced by the capacity of other resources such as the number of landing berths for lighters and other cargo handling equipment. 24 gangs containing 15 men and supporting tally clerks, etc., are available for the handling of sugar and 14 gangs of 12 men each together with supporting tally clerks etc., are available for handling general cargo and other bagged goods. However, when the demand for sugar gangs is reduced, up to 29 gangs have been operating for handling general cargo and other bagged goods. The average cargo handling rate is high: sugar 250 tons per gang/day, other bagged goods 150/200 tons per gang/day, general cargo 60 D/W tons per gang/day.

17. Up to mid 1970 a special organisation of about 200 men was employed exclusively in the transfer of fish from catchers to carriers and refrigerated stores. This activity has at present decreased to employ only 30 to 40 men. There are, however, indications that this activity will increase again.

18. The annual turnover of cargo, other than tanker cargo and bulk cement, is at present around 970,000 tons. The present annual capacity of the cargo handling system assuming 260 full working days is, on the basis of the cargo production rates for different classes of goods quoted above, sufficient for the quantities of sugar and other bagged goods handled and provides an excess capacity for the handling of general cargo of around 140,000 tons. However, more than two thirds of the cargo, i.e. most of the sugar, is processed during the period July—December. The reserve capacity is, therefore, available mainly during the period January—June. This comes to approximately 125,000 tons, resulting in a margin at present for the second half of the year of approximately 15,000 tons. These reserve capacities are feasible with the rational utilization of all resources, i.e. an unlimited interchangeability of different types of gang duties.

19. The rather slim margin in cargo handling capacity during the period July—December will be extended in the beginning of 1972. With the commissioning of the new West Quay, an annual general cargo handling capacity of approximately 75,000 tons will be added. This assumes a production rate of 60 tons per gang/day and an availability of the quay for general cargo for 180 days, considering that the fertilizer plant now under construction will occupy the quay 100 days p.a.

20. It might be possible to gradually transfer additional capacity from the period January—June to the period July—December by the spreading out of sugar shipments depending on world markets and quotas. Of the 1970 crop, 432,000 tons were shipped during July to December and a quantity of 103,000 tons was carried over to the period January—June. The quantity thus carried over is planned to increase in the next three years to 260,000 tons. This development may add another 30,000 tons capacity in the handling of the general cargo during the period July—December. Also with the coming into operation of the fertilizer plant by the end of 1972 imports of fertilizers will stop, and an annual capacity, in terms of handling of general cargo, of about 10,000 tons will be freed.

21. The reserve capacity, in terms of general cargo handling, that appears to be feasible over the next few years can be summarized as follows:

	July/December	*January/June*
1971	15,000 tons	125,000 tons
Beginning 1972 : addition of West Quay	52,000 tons	162,000 tons
End 1972 : Imports of fertilizers discontinued	72,000 tons	182,000 tons
Gradual transfer of capacity from July/December To January/June through increased spreading of sugar shipments up to 1974	gradual increase to 102,000 tons	gradual decrease to 152,000 tons

D. Other Resources

22. The new West Quay will provide access to the area called Mer Rouge of about 250 acres, which can be reclaimed at a reasonable cost in connection with the dredging of the harbour to a depth of 45′, which in itself is to be considered a priority development. Of this area about 50 acres have already been reclaimed by dredging carried out by the Marine Services. Investigations are being undertaken in preparation of a project for the reclamation of the remaining 200 acres and for the dredging of the harbour. The time of completion according to offers received would be 12 months. The Mer Rouge area is eminently suitable for development into an area for industrial or other activities connected with foreign trade, including transhipment facilities, possibly in the form of a free zone.

E. Revenue and Expenditure

23. Port revenue has increased from Rs 2½ million in 1960 to Rs 4½ million in the mid-sixties and Rs 7 million in 1970. This is made up of port dues of various kinds, quay and pipeline dues, crane and handling dues and port overtime charges.

24. Recurrent expenditure of the port authorities is Rs 3 million a year, allowing for pensions for former employees at a rate of 20 per cent of the salaries bill for permanent staff. Of this 55 per cent are labour costs.

25. Although the port dues and fees can be described as reasonable, taking into account the volume handled, there is no room for an increase of the rates at this stage. In conformity with the overall policy of promoting activities connected with foreign trade operations, the port is to be considered primarily as an infrastructure service for and an incentive to such activities. In any case any decision on the level of port dues and fees will need to be subject to the findings of the port development study, which is about to be undertaken. Details are given in Appendix I.

F. Shipping

26. Ships of 17 principal shipping lines maintain regular services for freight to and from Mauritius linking the island directly with ports in the U.K., the Continent, Scandinavia, West Africa, South Africa, Madagascar, Reunion, East Africa, India, Pakistan, Singapore, Hong Kong, Japan, Australia, New Zealand, Argentina and Brazil. Notably missing from the list of destinations served are ports in Eastern Africa north of Mombasa and Persian Gulf ports. Apart from this, the regular shipping services can be considered as more than ample in relation to the small volume of freight. The important cargoes, sugar and rice, are carried by tramps on short term charter.

27. Conference rates are generally high. However, before the last increases which occurred between October 1st, 1970, and April 1st, 1971, there had been no increase since July 1966, apart from a fuel surcharge arising from the closing of the Suez canal and the increase caused by the devaluation of £ sterling. The last increases may have been partly due to increases in cost in Port Louis, following delays caused by recurrent stoppages of work in the port. In the main, however, the high level of rates, and the increases which have occurred, are due to the small volume of freight, both in total figures and often per consignment, the imbalance between incoming and outgoing cargo and the secular increase in costs in general for the running of ships. There seem therefore to be reasons to expect further increases until a substantial development in the volume of cargo makes possible an improvement of the situation. It has also to be kept in mind that one important cargo, cement, recently disappeared from the conference lines' vessels and that another large cargo, fertilizers, will disappear by the end of 1972. All the same, attempts will be made to identify, and to the extent possible

minimise, such local cost factors that may have contributed to the last increase in freight rates and that may tend to contribute to further increases.

28. Concerning export cargoes there should be possibilities of negotiating favourable rates. Owing to the imbalance between incoming and outgoing freight the shipping lines have good reason to offer inducements to obtain outward cargo. This could be in the form either of special rates for specific items or of having specific items included in a more favourable rate class than currently applied. The prospects of obtaining favourable rates—also for incoming cargo—should be particularly good for shippers who are able to base such requests on specified quantities over extended periods.

29. The considerable increase in freight volumes, both incoming and outgoing, that would result from the anticipated development of industrial and other activities connected with foreign trade operations, will form a basis also for the extension of destinations served from Mauritius, by attracting additional shipping lines. Special attention should be given in this context to Persian Gulf ports and shipping lines which may be interested should be approached at an early stage.

30. The prospects of attracting large scale transhipment activities are likely to be important. In view of the present strong trends towards the introduction of advanced technologies in the shipping industry—transforming the types of ships and services—and towards a grouping of shipowners into big organisations building up world-wide interlocking networks, there will be a need for the establishment of major transhipment points at a number of strategic ports throughout the world. This assumption is in particular valid in relation to the development of containerised shipping, as only in this way can the full potential benefits of moving containers in very large ships be realized.

31. These prospects will be investigated and the shipping organizations concerned approached at an early stage. The realization of such activities in Mauritius would bring about not only considerable foreign exchange earnings, but would create additional employment in the port and improve shipping services available to local industry and trade.

32. A Mauritian shipping industry is being developed by three Mauritian Companies (The Colonial Steamships Co. Ltd., the Mauritius Steam Navigation Co. Ltd. and the Société Mauricienne de Navigation) employing at present five ships registered in Mauritius, apart from a number of chartered ships registered elsewhere, in international transportation of goods and passengers. (See Appendix II).

G. Long-Term Development

33. Owing to the insignificance of the local market and the lack of raw materials, industrial development in Mauritius will have to depend almost entirely on activities connected with foreign trade operations. The port of Port Louis and its development is therefore of crucial importance

34. In the policy established for industrial development, maximization of employment is a principal objective. This is in principle also valid concerning cargo production in the port. Thus the objective of employment maximization must be applied to the extent this is possible without prejudice to the efficiency of cargo production and to the unhampered development of the foreign trade of Mauritius.

35. As already indicated, new technologies in shipping and cargo handling as well as entirely new types of internationally co-ordinated services are being introduced. Services involving bulk carriers, container ships and other unit load ships are expected to grow rapidly over the next ten years at the expense of services offered by conventional liners and general purpose tramps. As foreign trade is playing an all important role in the economy of Mauritius, the development of the port and its cargo production systems must conform to the reasonable expectations of our trading partners and to the standards, systems and equipment of the international shipping industry serving them and Mauritius. It may for these reasons become inevitable to introduce both bulk handling of sugar and facilities for the handling of containers, in spite of the recognized fact that the present lighterage system for sugar and breakbulk cargo is very efficient.

36. In order to maintain the present high standard of operations and to enable the users of the port facilities, and the public and private organizations providing the facilities, to plan their immediate and future activities, it will be of paramount importance to establish an official policy on port development including a long-term development plan. Inescapable substitutions of capital intensive systems for the present labour intensive ones will be staged as late in the Plan Period as is possible without risk of endangering the trade they are serving.

37. A comprehensive port development study, which will result in such a policy and plan will be undertaken in the near future.

H. Medium Term Development

38. Provided the West Quay is extended and that sugar shipments are spread as foreseen, excess cargo handling capacity in 1974/75 during the period July — December can be expected to amount to about 100,000 tons and during the period January—June to about 150,000 tons. This would correspond roughly to the estimated increase in quantities of general cargo (excluding tanker cargo and bulk cement) imported and exported over the period 1972-1975, based on projections of trade and additional export manufacturing. However, owing to the fact that most of the sugar is shipped during July—December, the cargo handling capacity based on normal working hours is less than the estimated quantities of cargo during this period in each of the years 1972-1975. This shortage can be overcome by overtime operations and by introducing adequate cargo handling equipment on the quays. Although these estimates inevitably

contain an element of uncertainty, they clearly indicate the necessity of extending the West Quay in the near future, of introducing additional cargo handling equipment for quay operations and of pursuing every possibility of carrying over sugar shipments from July—December to January—June.

39. Other important service facilities in the port can on the whole be considered to be able to handle increasing demands, in particular bunkering facilities, with the introduction in the near future of a bunkering barge.

40. It seems therefore possible to leave the planning of the future development of these services to the port development study which will be able to incorporate the possible effects of a re-opening of the Suez Canal, the closing of which brought a sharp increase in these activities.

41. Prior to the establishment of the long-term development plan following the port development study, the following minimum development is required to meet expected demands during the Plan Period 1971/72 to 1974/75. The port development study may show that further development must take place during this period:

(i) Extension of West Quay

(ii) Provision of cargo handling equipment West Quay and other quays

(iii) Access road to West Quay and Mer Rouge

(iv) Construction of shed, West Quay

(v) Renovation of Granary Elevator

(vi) Construction of provisional passenger terminal

(vii) Reclamation of Mer Rouge, including deepening of harbour construction of retaining walls and diversion of Lataniers River

Airport and Air Transport

A. General

42. Plaisance Airport was built during the second World War by the British Admiralty and was operated by the Royal Air Force until the 31st of July, 1946. The Department of Civil Aviation was created on the 1st July, 1947. At that time there was only one weekly service operated by Air France. From 1947 to 1957 the airport was run mainly with the equipment left over by the Royal Air Force. The development of the Airport started really in 1957/58. During the last decade the Airport has been under continuous development and the total expenses incurred amount to Rs 20 million. The total paved length of the runway is 8,500 ft (2,590m.) on a bearing of 117°/297° true. The main features of the Airport are described in Appendix III.

43. Aircraft movements, including military aircraft, passenger traffic, freight and mail have been steadily increasing over the years. Comparative figures are shown hereunder:

Year		*Aircraft Movements*	*Passengers Handled*	*Freight Kgs*	*Mail Kgs.*
1957	...	363	10,581	106,473	31,599
1958	...	469	11,776	98,545	38,256
1959	...	563	13.340	91,304	42,030
1960	...	568	16,030	110,578	54,455
1961	...	735	18,518	272,349	60,764
1962	...	894	25,385	174,368	64,389
1963	...	913	31,056	173,952	68,419
1964	...	1,044	37,522	204,573	73,897
1965	...	1,290	42,146	232,394	90.670
1966	...	1,378	50,042	257.500	84,910
1967	...	1,667	60,210	399,893	93,688
1968	...	1,650	69.866	497,323	115,670
1969*	...	1,469	84,672	532,783	117,505

B. Air Cargo

44. The present available air cargo facilities are utilized only to a minor extent for export commodities such as fruits, flowers, ginger, wigs, toys, clothing, gloves etc.

AIR CARGO CAPACITY AVAILABLE PER MONTH FROM MAURITIUS (IN TONS)

Carriers		*Europe and U S A*	*Asia/Australia*	*South and Central Africa*	*Reunion/ Tana E. Africa*	*Total*	*No. of Flights*
Air France	...	52	*via* Paris	—	48	100	20
Air India	...	4	8	—	—	12	4
B.O.A.C.	...	2.5	*via* London	—	10	12.5	4
E.A.A.	...	4	*via* Nairobi	—	8	12	4
Lufthansa	...	8	*via* Frankfurt	—	—	8	4
Qantas	...	*via* Johannesburg	12	12	—	24	16
S.A.A.	...	do	12	12	—	24	16
Zambia Airways		*via* Lusaka	—	2	—	2	4
TOTAL	...	70.5	32	26	66	194.5	72

Average capacity used monthly is about 35 tons.

C. Airport Revenue

45. Landing fees at Plaisance Airport are Rs 6 per 1,000 lbs. weight all up, as shown in the Certificate of Airworthiness, bringing in Rs 1½ milion a year at present. Passenger charges are Rs 12 per outgoing passenger bringing in Rs ¼ million a year. There is also a fuel throughput charge of 3.7 cents a litre which is charged to the fuel concessionaires bringing in over Rs ½ million a year.

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* There was a considerable reduction in military aircraft movements in 1969.

D. Future Development

46. With the planned introduction into civil aviation service of high capacity aircraft types (jumbo's) together with the possible introduction of supersonic transport aircraft (SST's), a review of the adequacy of Plaisance Airport became a necessity. It is felt that if adequate facilities are available it is likely that second generation high capacity jet aircraft will be introduced on the following scheduled airline services, through Mauritius in the mid 1970's:—

(a) South Africa—Australia, by Qantas and South African Airways;

(b) Europe—Mauritius, by BOAC and Air France;

(c) India—Mauritius, by Air India.

It was, therefore, necessary to assess the probability of the introduction of these services and the desirability of providing the facilities therefor. It is realised that if nothing is done, the existing scheduled airline services are likely to be drastically reduced in five to six years' time when the island's usefulness as a transit point disappears. However, the development considerations involve two alternatives:

(i) whether the facilities required by jumbo jet and to a lesser extent SST aircraft are too costly and not justified;

(ii) whether *(a)* to develop Plaisance Airport to cater for these aircraft or

(b) to abandon Plaisance Airport and construct a new international airport on a new site.

A thorough study of the problem has been undertaken by missions from the French and Indian Governments. A French technical mission visited Mauritius in July 1970, following the Mauritius Government's request to the French Government for technical assistance to make a feasibility study of the airport in view of the coming into service of large capacity aircraft. The mission recommended the development of the existing aerodrome and rejected the suggestion that a new airport be constructed on a new site in the North of the island. It showed the possibility of constructing, at Plaisance Airport itself, a new runway, for four-engined jet aircraft, allowing landings by ILS and offering facilities for subsequent extension.

47. An airport capable of receiving all types of aircraft would constitute an important asset for Mauritius whose activities will be geared towards greatly increased international trade. Therefore, if the characteristics of Plaisance Airport were not to follow the evolution of aircraft characteristics and safety standards, the traffic and business relations as a whole would doubtless suffer. Moreover, the quality of the airport's infrastructure constitutes an important factor in the development of tourism in Mauritius.

48,. The mission undertook a forecast of future traffic using, as a basis for calculation, past figures for the period from 1959 to 1968 and the world forecast for future traffic made available by the International Civil Aviation Organization. During that period, local traffic at Plaisance increased by 19.2 per cent per annum and transit traffic by 26.1 per cent, against a world mean increase of 10 per cent. Local traffic is calculated to increase by 15 per cent per annum and transit traffic by 18 per cent per annum up to 1975 after which percentage increases could follow the forecast mean world average. The importance of transit traffic in relation to the overall total in terms of airport revenue has been stressed.

49. Annual aircraft movements are expected, assumnig an annual increase of 15 per cent, to increase up to 2,500 per annum in 1975 and thereafter to 4,800 in 1980. In the same period and on the same assumption, air freight would increase to 1,600 and 3,200 tons respectively. The mission assumed that the larger type jet aircraft like the Boeing 747 will come into service in 1975 which will not bring major new problems but aggravate existing ones due to limited facilities being now available. A supplementary geotechnical study has now been completed to provide a complete dossier on the development possibilities of Plaisance Airport.

50. Early in 1970, an Indian Technical Mission visited Mauritius to investigate the alternative possibility of the construction of a new airport in the North. The mission has now completed a topographical survey and has submitted a report to Government.

51. Whatever alternative is chosen, the economic potential of the airport as a site for industrial and related development will be studied and taken into account in the elaboration of the airport development plan. Modern airports have become considerable generators of employment, *inter alia* in connection with the fast rate of growth of international air freight. In particular airports which have established free zones for manufacturing and trade—e.g. Shannon—have experienced a very considerable growth and have become major industrial zones. An investigation of these prospects is included in the general study of the feasibility of establishing free zones in Mauritius, now being undertaken. In addition, the terms of reference for the immediately pending port development study comprise a section on expected air cargo developments in Mauritius and on the transportation and handling facilities required for the projected development.

52. Apart from the general international trend of increasing air freight, and the prospects of extensive air-freighting of materials for and products of local industry, additional prospects may arise in connection with expected technological developments in sea transportation. As indicated in the section on port development, there will be a need for major transhipment points at strategic ports throughout the world; Mauritius may be suitable for such a function. In connection with the pursuing of this potential activity, the possibilities of introducing air freight for a

part of the transhipments will be investigated. The combination of fast liner service to Mauritius and forwarding by air—on through bills of lading—is likely to be attractive for a wide range of commodities, which would not normally be air-freighted. The system would thus bring additional business to the airlines and would at the same time enable the shipping lines to reduce the number of calls at minor destinations. Such a service would of course involve the establishment of a close co-operation between ship-owners and airlines. These prospects will be vigorously pursued. Apart from creating employment and revenue, the operations envisaged would help maintain air freight services for local production at such a cost level that these facilities will constitute an incentive to industrial establishment.

53. In order to be significant, the attempts to develop air freight facilities must aim at really large scale operations exceeding the cargo capacity offered in connection with regular passenger services. The prospects of establishing an independent air freight organisation based on Mauritius will be studied at an early stage.

54. As the preparation of the project of airport development is expected to take one year and the time of construction is estimated to take three years, project preparation will start immediately and it is expected that the new airport will be ready by 1976.

Roads and Road Transport

A. Roads

55. There are ten miles of motorway from Port Louis to Phoenix, 340 miles of main roads, mainly of 24 foot width, and 260 miles of bitumenised rural roads. This gives a density of 0.85 miles of bitumen surfaced roads per square mile. There are a further 260 miles of rural roads with water-bound surface. The total mileage of roads within municipal boundaries is 370.

56. Expenditure on the maintenance of roads and bridges outside the municipal areas, excluding the salaries of permanent staff and the overheads of the Public Works Department*, has averaged Rs 3½ million a year in the 1960's. Expenditure on new road construction in the 1960's has amounted to Rs 40 million.

57. Mauritius is served with an extensive road network. However, as traffic increases due to anticipated increased development activity, many roads will require improvement and will have to be upgraded. The main road developments that will need to be carried out over the next four or five years are the entrance roads into Port Louis from the South (2.1 miles) and from the North (3.3 miles) and the extension of the motorway, skirting the main urban areas and villages to Plaisance Airport (18 miles), or a new motorway to the North should it be decided to construct a new airport in the North. Other road construction and

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* Now Ministry of Works.

improvement will—over the next four years—be carried out as part of the T-P-T programme. To provide unimpeded access to Port Louis (and for through traffic) and to link Port Louis with the airport, (for goods traffic as well as for passengers) will require the construction of 25 miles of additional motorways, at a cost which is provisionally estimated at Rs 60 million. The cost of other road construction and improvements, including urban roads, can be expected to amount to Rs 100 million over the next decade.

B. Motor Transport

58. At the end of 1969 there were 23,500 motor vehicles on the road in Mauritius, of which:

Trucks (lorries) ...	2,500
Vans	1,650
Buses	700
Taxis	1,300
Government Vehicles ...	1,100
Private motor cars ...	11,200, as well as
Motor cycles ...	5,000

59. A substantial part of the fleet of lorries is required to move 5 million tons of sugar cane from field to mill during the crop season. Gross earnings of lorry owners, or total costs including depreciation in the case of estates and other growers owning their own lorries, in moving the sugarcane harvest aggregate approximately Rs 30 million. The total annual value of the operations of the 4,000 lorries and vans on the Island (including those of operators transporting their goods in their own lorries and vans) may be estimated at around Rs 75 million a year.

60. The total value of the passenger traffic carried on motor vehicles on the Island may be estimated at around Rs 70 million a year. This is the gross takings of buses, taxis and car hire firms plus the costs, including depreciation, incurred by car owners driving their own cars.

61. The 650 buses on the Island carry 200,000 passengers a day at an average fare of 26½ cents per passenger, making a total of gross receipts of Rs 20 million a year. The number of taxis, chauffeur driven and self-drive hire cars is one per 600 of the population. The standard fare for taxis is 35 cents a mile. Gross takings probably amount to around Rs 10,000 a year per taxi. The gross value of sales of all taxis and hire cars is therefore probably of the order of Rs 15 million a year.

62. The annual value of the operation of the privately owned motor cars on the Island—of which there are one per 75 of the population—must be considered to be the cost actually incurred by the owner. Including depreciation these costs may be put very roughly at Rs 3,000 a year per car (1,000 miles a month at 25 cents a mile). This would make a total of Rs 35 million a year.

63. Of the total value of the operation of road transport of Rs 14 million a year, returns to labour are probably of the order of Rs 30 million. Purchased inputs and services (excluding indirect taxes) other than repairs and maintenance account for approximately Rs 30 million. Of this the cost of:

	Million Rs
20,000 tons of gasoline at Rs 500 a ton is	10
30,000 tons of gas oil at Rs 375 a ton	11
2½ million litres of lubricating oil at 95 cents c.i.f. ...	2½
Tyres and tubes (c.i.f.)	4

64. Government revenues in indirect taxes from recurrent expenditure on the operation of road transport (both private and public) amount to Rs 25 million a year:

	Million Rs
Import duties on gasoline at Rs 600 a ton ...	12.50
Import duties on gas oil at Rs 115 a ton	3.75
Pipeline duties on 50,000 tons at Rs 3.15 a ton ...	0.16
Import duties on lubricating oil at 7 cents a litre ...	0.20
Import duties on tyres and tubes	0.75
Vehicles and drivers' licences	7.00

65. Depreciation costs for the entire vehicle fleet may be estimated at around Rs 20 million a year, of which Rs 3½ million is in respect of impor duties on new equipment. The balance of Rs 40 million is accounted for by the profits of operators, overhead cost such as insurance, and the cost of repairs and maintenance.

66. The import cost of lorries (trucks) and other motor vehicles fo the carriage of goods, including replacements of the existing fleet, is estimated at Rs 95 million over the next ten years, at 1970 prices. Rs 2 million will need to be invested in commercial passenger carrying vehicles mostly for replacement. With most of the increase in earnings over the next decade going to that part of the labour force which will not be able to afford private motor cars, the number of private cars on the roads may only increase moderately by the end of the decade. Allowing for an average replacement (of the vehicle, not changes in ownership) over seven years, this would require an expenditure, at present c.i.f. prices of Rs 120 million over ten years. All told, allowing for governmen vehicles, motor cycles etc., investment in road transport in the seventie at 1970 prices, excluding import duties and importer's and retailer margins, may be estimated at Rs 250 million.

67. Investment in transportation facilities—roads, harbour, airport and transportation equipment—can be expected to account for 23 per cent of gross investment in the economy in the 1970's. Since the demand for transportation facilities is derived from the rate of growth in the economy as a whole, investment in transportation facilities over a period of ten years or more is usually a fairly constant proportion of total gross fixed investment in the economy. Studies carried out by Jan Tinbergen indicate that, at widely different stages of economic development, this proportion has been between 20 per cent and 25 per cent over the last hundred years.

Posts and Telecommunications

A. Telephone Service

68. The first telephone service in Mauritius—a private line between the Governor's residence at Le Reduit and Government House, Port Louis,—was opened by the Oriental Telephone and Electric Company in 1883. By the beginning of the twentieth century there were 70 telephone subscribers connected to a central exchange at Port Louis. The telephone company was purchased by Government in 1938, at which time there were 666 direct exchange lines connected to five exchanges.

69. At the end of 1970 there were 12,000 subscriber lines and 18,000 telephone stations—two for every 100 of the population. The telephone density can be expected to increase to 3 per 100 of the population by 1990.

70. The depreciated value of the fixed capital employed by the Telephone Service in June 1970 was Rs 20 million. Annual operating expenditure is Rs 3 million. There are, on average, 1,000 calls a year per telephone. Unit call charges since November 1967 are 17 cents. Revenue from public telephones is Rs 4 million a year. In addition the Department handled government traffic to an annual value of over Rs 1 million.

71. The present capacity of the automatic exchange at Port Louis is 4,500 lines. It is expected that these will be used up by June 1972. The present rate of growth is 7 per cent a year. It is expected that 350-450 new lines a year will be needed in the next few years. With the extensions now being built, the Rose Hill automatic exchange will have 5,300 lines. The present growth rate is 4 per cent a year and the available lines will be used up by the end of 1973. It is expected that 250-350 new lines a year will be needed in the next few years.

72. The Central Battery exchange at Curepipe has 2,200 lines and that at Vacoas 1,200. These will be replaced by a new automatic exchange at Floreal. The building will be erected in 1971/72 designed to house a full ultimate capacity of 10,000 lines. The exchange is to be commissioned in 1974.

73. There are further 20 rural automatic exchanges of 50 to 200 lines capacity. Five new rural automatic exchanges will be built over the next three years. The equipment at eight of the rural exchanges is obsolescent and will be replaced over the next four years. Extensions (50 line units) will be carried out at twelve other rural exchanges in the same period.

B. Overseas Telecommunications

74. External telecommunications are operated under licence by Cable and Wireless Ltd. with two 3½ kw and two 1 kw wireless transmitters. 24 hour telex and telegraph links and a three hour telephone link are maintained with Nairobi and, through Nairobi, with the international network. There are 15 telex subscribers in Mauritius. There is also a telex link with Tananarive and a second telex link with Nairobi is to be opened shortly.

75. Direct telegraph and telephone links are maintained with Reunion, Tananarive and Rodrigues. A multichannel UHF link with Reunion is being installed on Signal Mountain at Port Louis and is expected to start operating in June 1971.

C. Postal and Internal Telegraph Services

76. The Postal Service handles some 7 million overseas and 1 million inland postal articles a year at 36 post offices and 16 postal agencies. The Department also handles some 7,000 inland telegrams a year and overseas telegrams received or despatched outside Port Louis. Annual revenue, mostly from the sale of stamps, is Rs 4½ million and recurrent expenditure is Rs 3½ million.

77. The most urgent requirement for capital expenditure is a new building at the General Post Office at Port Louis to house the sorting and parcel office, stores and a training school. New post offices, to replace the existing ones, will be built over the next four years at Curepipe, Rose Hill and Vacoas, and half a dozen smaller centres.

Meteorological Services

A. General

78. The Meteorological Department maintains stations at:

Vacoas	...	20° 18′ S,	57° 30′ E	at	1,394 ft.	above m.s.
Plaisance Airport	...	20° 26′ S,	57° 40′ E	at	187 ft.	above m.s.
Rodrigues	...	19° 41′ S,	63° 25′ E	at	194 ft.	
St. Brandon	...	16° 27′ S,	59° 37′ E	at	13 ft.	
Agalega	...	10° 26′ S,	56° 45′ E	at	10 ft.	
Diego Garcia	...	07° 21′ S,	72° 29′ E	at	7 ft.	

The last named station is run on behalf of the administration of th British Indian Ocean Territories.

79. There are 252 rainfall stations on the Island of Mauritius maintained by Government Departments, sugar estates and other authorities. Duration of sunshine is recorded at seventeen stations. Wind records are made on sugar estates at Pamplemousses, St. Antoine, Medine and Union Flacq. The Department maintains anemometers at its stations at Plaisance, Vacoas, Port Louis Harbour and Flat Island. Agro-meteorological stations are run at Belle Rive, Union Park, Réduit, Palmyre and St. Antoine in Mauritius and at Marechal in Rodrigues.

80. Five stations operated by the Department make regular surface observations for the Global Observing System of the World Weather Watch and two radiosonde and radar-wind stations are operated in Mauritius and Diego Garcia. The United States has supplied the Department with receiving equipment for photographs from meteorological satellites. This enables immediate information to be obtained on the location and shape of tropical cyclones and also gives a picture of the cloud cover over most of the Western Indian Ocean.

81. Weather information for shipping in the Indian Ocean is broadcast twice daily on GZC for that part of the Indian Ocean lying north of latitude 30° S and west of longitude 95° E. A smaller area between latitudes 10° S and 30° S and longitudes 10°E and 85° E is provided for twice daily by broadcasts from VRS in morse and VRS 3 in telephony.

82. The technical staff of the Department consists of twelve meteorological officers and 45 assistants. Annual expenditure is Rs 0.75 million of which Rs 350.000 are contributed by British Government agencies.

B. Future Development

83. The main capital requirements for the Meteorological Services over the next four years is a 10 cm. radar surveillance of weather. The main station—the Vacoas Observatory—is situated on a site which is not suitable for future requirements and particularly not for the installation of such an instrument, which would have its use seriously limited by the high ground to the South and East, particularly the Curepipe Heights only four miles distant, by the Moka range to the North, from which sector cyclones normally approach, and by buildings and high trees in the close vicinity of the present observatory. The station will be moved to a site at between 1,500 and 2,000 ft. above mean sea level.

Electricity

A. Present Structure

84. The Central Electricity Board, a para-statal organization, operates two oil fired and six hydro-electric generating stations with a combined effective capacity of 43 mW:

Oil fired	St. Louis	16 mW
	Fort Victoria ...	12 mW
Hydro-electric	... ...	15 mW
		43 mW

The Ferney hydro-electric scheme under construction will add 10mW capacity. The work is nearly completed and the plant will go into operation by June 1971. There is, further, an effective thermal capacity totalling 12 mW at the twenty-two sugar mills during the milling season.

85. In 1969 the Central Electricity Board generated 104 million kwh and purchased 25 million kwh from the Sugar Mills. Operating costs were 10.5 cents a unit, of which generating costs and the cost of power purchased from the sugar mills account for 6.1 cents on average, and transmission, distribution and administrative cost for 4.4 cents. The cost of generating power at the C.E.B. thermal stations is 8.1 cents a unit of which the import cost of fuel oil accounts for 6.25 cents (excluding import duty). Operating cost per unit sold works out at 13 cents on average.

86. The fixed assets of the Central Electricity Board at the end of 1969 amounted to Rs 120 million at cost and a book value of Rs 80 million. Loans outstanding amounted to Rs 92 million, of which Rs 19 million from Government and Rs 28 million from the International Bank for Reconstruction and Development (World Bank). Capital cost per unit sold amounted to 9.5 cents on average.

87. Sales of electricity have been increasing by 6½ per cent a year from 1966, taking 1965 as a base year, to over 102 million kwh in 196 Sales by type of consumer in 1969 were as follows:

	Million kwh sold	*Income Rs Million*	*Average Price Per Unit Mauritian cents*
Industrial	23.8	3.8	16.1
Royal Navy	13.1	2.3	17.4
Commercial	21.0	4.8	22.7
Domestic	43.6	11.4	26.0
Other	0.9	0.2	—
TOTAL	102.5	22.5	21.9

B. Future Demand

88. The demand for electricity is expected to increase by about 10 per cent p.a. during the Plan Period. Accordingly, the volume of sales will have grown to about 175 Mkwh by 1975, requiring a generation of about 211 Mkwh. The anticipated sales by type of consumers in 19 would be as follows:

	Sales Mkwh 1975
Industrial	67
Commercial (10% annual increase)	37
Domestic (5% annual increase)	58
Royal Navy (no increase)	13
Other (no increase)	1
TOTAL	176

89. The projected demand in the industrial sector is based on the assumed consumption p.a. per workplace of 2,500 kwh in establishments employing 10 or more persons and of 1,000 kwh in establishments employing less than 10.

C. Policies and Programmes

90. The Central Electricity Board's (C.E.B.) plans for the next five years are geared to meeting the expected increase in demand during 1971 to 1975 at the rate of a 10 per cent p.a. This increase in demand for electricity is considered consistent with the anticipated development during this period.

91. As the hydro resources of the country are limited, most of the further growth in demand have to be met by thermal generation. The C.E.B. is already undertaking the construction of four 6MW Medium Speed Diesel Groups to operate on residual oil. The first group is expected to become operative in September 1972, while two other similar groups will be commissioned at intervals of six months. These additional thermal plants will be installed at the existing Fort Victoria Thermal Station. At the same time, the feasibility of hydro projects is under study to tap the natural resources of the Island. The survey work for such schemes is generally long and protracted. The realization of these projects would, however, apart from supplementing existing plant, lead to a reduction of the overall generating costs.

92. Since 1958 the Central Electricity Board has been considering the feasibility of erecting a dam at Soreze in order to meet the industrial expansion that can be expected especially in the Port Louis area. The dam would also improve water supply to Port Louis which is already critical. The Grand River North West has the largest catchment area in Mauritius and impounding its water, would also help solve shortage of irrigation facilities in the immediate area.

93. The crest level of the dam is estimated to be 650 feet AMSL but the power station will be at some 50 feet AMSL. Therefore the maximum static head available will be 600 feet. A pressure tunnel of approximately 2.9 miles will have to be erected to link the dam to the power station—together with about 1,000 feet of steel penstock. After making deductions for loss of head in the tunnel and pipe and the loss which can be expected under operating conditions, the net head will be 505 feet. The energy generated by the turbine will be 41 million units per annum but 10 million units will be used for pumping water back to Port Louis and another 3 million units will be lost due to the evaporation of water. The net energy available would therefore be 28 million units p.a.

94. The main 22kV Trunk line supplying the Northern Sector of the Island, and fed from St. Louis Substation, will be reinforced by the construction, scheduled for 1972, of a 66 kV overhead line up to a new step-down substation near the Military Road operating at both 22kV and

6.6 kV. It will supply electricity to the Fertilizer Plant in the Fort George area as well as cater for future requirements in the same zone. Part of the growing load of Port Louis proper, fed at 6.6 kV from the Poudriere Substation, will be transferred to the new Substation.

D. Rural Extension Programme

95. The C.E.B. has been undertaking a programme of rural electrification and by the end of 1969 about three quarters of the total rural areas had been electrified. It is continuing with this work in the 1971-75 Plan Period. Each year, about 1,700 new rural consumers will be provided with electricity and by 1975, some 7,260 new rural consumers will have been added, completing the work of rural electrification.

Year		*No of Consumers*
1971	...	1,604
1972	...	2,157
1973	...	1,865
1974	...	1,635
		7,261

As the main rural 22 kV network already exists, relatively short 22 kV spurs will have to be erected to feed through suitably rated step-down transformers into the L.T. reticulation.

E. Pricing Policy

96. The C.E.B. will evolve a price structure which will enable it to become self-financing, that is to say, it will recover its cost, including its capital costs, from its overall sales.

WATER

A. Domestic Water Supplies

97. The present supply of treated water for domestic and industrial use is 165,000 cubic metres a day—60 million cubic metres a year. Consumption per head works out at around 400 litres a day in the Port Louis area and between 100 and 150 litres a day in other parts of the Island.

There are three distribution systems on the Island for domestic water supplies:

		Water Supplied in 1970 m³/day
Port Louis	...	55,000
Mare-aux-Vacoas	...	82,000
Districts	...	37,000
		174,000

98. The Municipality of Port Louis has been responsible for water supplies in the greater part of the capital throughout its history, except for the twenty years 1920-1940. A weir across the Grand Rivière Nord-Ouest at an elevation of 80 metres, seven kilometres southeast of Port Louis, allows water to be supplied by gravity through three pipelines 45 cm., 48 cm. and 68 cm. in diameter and having a combined capacity of 60,000 m³ a day to an overloaded treatment plant 4 km from Port Louis. There are four service reservoirs with a total capacity of 15,000 cubic metres situated on the slopes commanding the town.

99. There are 8,000 metered connections. In addition there are 1,000 " prise " connections, intended to give a constant daily quantity controlled by orifice, and free connections for " fountains " for public use and government buildings.

100. The Mare-aux-Vacoas scheme supplies the more densely inhabited areas in the Western half of Mauritius, outside Port Louis. It also supplies some 5,000 cubic metres a day to the Port Louis area. The scheme is operated by the Ministry of Works.

101. Most of the supply comes from the Mare-aux-Vacoas, a multipurpose reservoir supplying water for domestic, hydroelectric and irrigation purposes. The catchment area of the reservoir has a mean annual yield of 40 million cubic metres. In a year of average rainfall the reservoir may be expected to yield about 100,000 m³ a day.

102. Water from the reservoir is purified at the La Marie treatment works (slow sand filtration and gas chlorination) which has a capacity of up to 60,000 cubic metres a day, 22,000 m³ of ground water is pumped into the distribution system. The Mare-aux-Vacoas system supplies 20,000 metered and over 9,000 unmetered connections.

103. The Districts' system, also operated by the Ministry of Works, supplies the North, East and South of the Island. The main source of supply is the Piton du Milieu reservoir, at present supplying 17,000 cubic metres of treated water a day to Flacq in the East, Grand Port in the Southeast, and parts of Pamplemousses and Rivière du Rempart in the North. Treatment is by coagulation, rapid sand filtration and chlorination.

104. The remaining areas of Pamplemousses and Rivière du Rempart are supplied with treated water drawn from the Rivière du Rempart and filtered at La Nicolière (5,000 m³ a day) and with chlorinated water from the Ruisseau Jamblon (2,000 m³ a day).

105. The Districts' scheme supplies 12,000 metered and 7,000 unmetered connections.

106. The demand for treated water for domestic and industrial use is expected to increase to 245,000 cubic metres a day by 1982—90 million cubic metres a year—compared to the present supply capacity of 50m

cubic metres a year. This would amount to an average consumption per head of 200 litres a day.

	1970 supply	1982 demand
	cubic metres per day	
Port Louis ...	55,000	95,000
Mare-aux-Vacoas ...	82,000	120,000
Districts ...	37,000	93,000
	174,000	308,000

B. Irrigation

107. 50-55 million cubic metres of irrigation water a year are supplied by the Ministry of Works to irrigate some 6,000 Arpents. This is equivalent to a constant flow of 1.65 m^3 or 60 cubic feet per second.

108. Water from the Mare-aux-Vacoas, Mare Longue and Tamarind reservoirs, after being used to generate electricity, passes into the 25 km long Magenta canal and irrigates about 2,500 Arpents on the Western coast. The supply of water at source is 35 million cubic metres a year. The La Ferme reservoir, also on the Western coast, has a capacity of 12 million cubic metres. It is fed by the Rivière Belle Ile and by feeder channels from the Rivière du Rempart, Rivière Sèche and Rivière Mesnil. 20 million cubic metres a year are supplied from this reservoir by canals 30 km long to irrigate some 1,500 Arpents. The La Nicolière reservoir has a capacity of 5¾ million cubic metres and is fed by the Rivière du Rempart†, the Calebasses River and the Grande Rivière South-East. Water from the reservoir flows through a canal 20 km long to irrigate 2,200 Arpents. The annual supply of irrigation water is 15 million cubic metres.

109. A further 30,000 Arpents are irrigated with water supplied by the owners or by associations of users. Aggregate supplies at source of irrigation water for these schemes have been estimated at 170 million cubic metres a year.

110. The FAO Land and Water Resources Survey team has estimated that, for the drier areas of the Island to achieve their full agricultural potential, supplies of irrigation water at source would need to be doubled to 475 million cubic metres a year. This would irrigate a total of 75,0 Arpents at an average application of 150 cm per year or a duty of 14 acres per cusec.

111. The main increase in supplies of irrigation water—1[illegible]0 million cubic metres a year—will be needed on the Northern Plains, and additional supplies will be needed along the Southern coast and in the Quatre Cocos region in the Northeast. More land could be brought under

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†A river of the same name as the one mentioned earlier in the same paragraph but in the Northeast.

cultivation and yields on land already under cultivation could be greatly improved on the Western Coast by redesigning the irrigation system and improving irrigation methods without substantially increasing the supply of irrigation water at source, which would not be practical.

112. The Northern Plain Irrigation Scheme envisages the overhead irrigation of 16,650 net crop acres of sugar cane or 13,920 net crop acres of diversified crops and the surface irrigation of 270 acres of paddy in the North-West part of the island. The total costs of the scheme will amount to Rs 45 million and the capital expenditure will be phased over the period 1971/72 to 1975/76.

113. The Western Coastal Region Irrigation Scheme will improve existing irrigation methods over an area of 12,600 acres and will bring 4,700 acres of currently uncultivated land under development. The total capital costs of the scheme are Rs 33.2 million phased over a period of five years.

114. The small-scale irrigation project envisages small-scale irrigations both by overhead and surface means of 10,000 acres of land over the whole island during the period 1971-75. This project is designed to enable small farmers who are unable, on their own, to invest on overhead irrigations equipment to group together in units of 10 acres so as to avail themselves jointly of irrigation facilities. The total cost of the project is estimated at Rs 17 million.

C. Water Charges and Costs

115. Water rates for domestic use in Mauritius are 11 cents a cubic metre at points below and 16 cents above filter beds (for instance Curepipe).‡ Rates for industrial use are as follows:

	Port Louis Municipal Supplies	*Ministry of Works Water Supplies*
	cents per cubic metre	
for the first 1,000 m^3/quarter	18	21
for the next 1,000 m^3/quarter		16
over 2,000 m^3/quarter		11

In addition there is a fixed charge of Rs 44 a year and meter hire charges of Rs 60—120 a year.

116. Sugar estates pay 1.18 cents per cubic metre for untreated water. Charges for irrigation water are 0.44 cents a cubic metre for the La Nicolière-system and 0.22 cents a cubic metre for areas served by the Magenta canal and the La Ferme reservoir.

117. The cost of maintenance for domestic water supplies by the Ministry of Works, excluding the salaries and wages of permanent staff and overheads of the Water Development Department, work out at

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‡For comparison : Mbabane, Swaziland — 50 cents/m^3
Mombasa, Kenya — 80 cents/m^3

7 cents per cubic metre. Capital expenditure on domestic water supplies by the Department, which at present supplies 43.5 million cubic metres a year, has amounted to Rs 27 million in the 1960's. The capital expenditure required to provide the additional supply of water for domestic and industrial use that will be needed in the 1970's can be expected to come to around Rs 2.50 per additional cubic metre supplied.

118. Maintenance costs for the supply of irrigation water by the Water Development Department work out at 0.83 cents per cubic metre supplied to users. Capital expenditure by Government on irrigation in the 1960's has amounted to Rs 7½ million. This is an annual rate of 1½ cents per cubic metre supplied per year.

119. It is the cheaper sources of water that have been developed for irrigation so far. Further irrigation development will be more expensive per cubic metre of water supplied.

120. The project for irrigating the western part of the Northern Plains will supply an additional 86 million cubic metres of water a year at the point of sale. The capital costs of the supply of irrigation water are estimated at 37 cents per cubic metre/year.

121. 106 million cubic metres a year will be needed for irrigation on the Western Coast. Little of this will be additional to the supplies fed to the area at present; it is mainly a question of redesigning the distribution systems to enable more effective use to be made of the water supplies. The capital costs of the irrigation works will therefore be lower than on the Northern Plains and are estimated at 15 cents per cubic metre supplied per year.

122. The costs of developing the Island's water resources for domestic, industrial and irrigation use will need to be taken into account in future pricing policy for water, if these necessary developments are to be financed and carried out.

D. Organisation

123. On the recommendations of the FAO Land and Water Resources Survey, a public corporation will be set up, which will be responsible for the distribution and development of all public water supplies for all uses throughout the Island and which will have regulatory functions over the use of water in general, to ensure that this vital national asset is developed in the best interests of the economy. This corporation will be self-financing, that is to say it will recover its costs, including its capital costs, from its overall sales.

APPENDIX I

Rates—Dock Companies

The rates charged by the Dock Companies for conveyance of goods to the quay or the Customs shed vary on the whole between Rs 10.80 per ton for food commodities to Rs 13.50 per ton for not indispensable articles. For export goods, rebates between 4-10 per cent are granted. For goods transferred to the Transit Shed at the Queen's Warehouse—spirits and articles of luxury—the transport fee is Rs 4 per ton. The storage fees at the Queen's Warehouse are: first week Re 1 per ton, second week Rs 2, third week Rs 3, fourth week Rs 4 and every additional week Rs 8 (+5 per cent surcharge). For goods remaining on quays, wharves, transit shed etc. 10 days after landing, the Dock Companies charge Rs 0.50 per ton and day with a minimum of Rs 5 per day and goods owner. (By " ton " is meant 1,000 kilos or 40 cubic feet).

The rates charged by the Dock Companies for transhipment are:

1. By lighters without landing ashore: Rs 28.50 per ton (1,000 kilos or cubic metre);
2. By lighters landing cargo ashore including 30 days' storage: Rs 44;
3. From one ship to another direct without use of lighterage: Rs 12;
4. From one hold to another on the same ship without use of lighterage: Rs 15;
5. From one hold to another on the same ship with use of lighterage: Rs 28.50.

Dues and Fees—Marine Services

2. The aggregate of port dues works out at an average of Rs 1.50 per net registered ton for foreign fishing vessels and vessels loading or discharging cargo and half this amount for Mauritian registered vessels and ships calling only to take on bunkers or other supplies, reduced dues to undergo repairs or to land sick seamen. Naval, research and other government operated vessels are still exempt from port dues. The total of port dues collected in each of the years 1968-1970 was Rs 3.7 million, of which Rs ¾ million are attributable to vessels calling only for bunkering and other provisions.

3. Quay and pipeline dues are paid at a rate of Rs 3.15 per metric ton on all mineral oil, molasses, edible oil and liquid gas discharged or taken on board at Quays " D " and " C " and at the bunkering berth at Fort William. In the three years since the closure of the Suez Canal, an average of 100,000 tons a year of fuel oil and marine diesel oil has been taken on board vessels at Port Louis as bunkers. This compares with an average of 25,000 tons a year in the years immediately preceding the closure of the Suez Canal in June 1967. The average

quantity of bunkers taken on board is 100 tons per vessel. The quantity of bulk mineral oils discharged at Port Louis in the last three years was 165,000 tons a year. This was brought in tankers carrying 10,000 tons of petroleum products each on average.

4. Molasses are exported in tankers with an average capacity of 15,000 tons. Exports, which are very variable, depending on tanker freight rates to North America and North-West Europe, have averaged 140,000 tons a year in 1967-70. Crude edible oil has, since 1969, been imported in bulk and refined in Port Louis. Imports are 9,000 tons a year.

5. Including payments for overtime, port revenue from quay and pipeline dues is running at Rs 1½ million a year. Half of this is attributable to bunkering.

6. Handling dues are charged at a rate of Rs 5.25 per metric ton for **dry** cargo (other than bulk cement) landed at the port and lighterage **quays**, other than foodstuffs and government imports, which are exempt from these charges. The total volume of dry cargo handled, other than bulk cement is around 350,000 tons a year, of which half is foodstuffs and 10,000 tons are government imports. Handling dues come to around Rs ¾ million a year.

7. The other element in port revenue is port overtime, which amounts to Rs 1 million a year.

8. Recurrent expenditure of the port authorities is Rs 3 million a year, allowing for pensions for former employees at a rate of 20 per cent of the salaries bill for permanent staff. Of this 55 per cent are labour costs.

9. In addition to port and handling dues, there is a transhipment charge levied by the Customs Department, of Rs 1.05 per metric ton which applies to bunkers, tunny fish and general cargo transhipment at the port. This brings in a revenue of Rs ¼ million a year.

10. For vessels loading or unloading cargo at the port, total disbursements in the harbour of Port Louis, excluding bunkering and other supplies and repairs, are around Rs 22 million a year, made up as follows:

	Rs Million
Port dues	3.00 at an average of Rs 2.50 / ton cargo
Handling dues	0.75 at Rs 5.25 / ton
Port overtime	0.70
Mooring and unmooring ...	0.12 at Rs 300 / vessel
Agency fees	0.25 at Rs 650 / vessel
Stevedoring and cargo handling by dock companies	17.00
	21.82

APPENDIX I—*continued*

11. With a total of nearly one million tons of dry cargo, other than bulk cement, handled a year, this makes an average cost per ton of cargo of Rs 22.50.

12. Excluding costs directly attributable to import or export cargo, gross earnings from foreign shipping calling at Port Louis are a little over Rs 13 million a year, made up approximately as follows:

	Rs. Million
Port dues	3.75
Quay and pipeline dues (bunkering)	0.75
Port overtime	1.00
Transhipment duties	0.25
Government	5.75
Mooring and unmooring	0.30
Water (125,000 tons at Rs. 4 per ton) ...	0.50
Ships' stores	3.00
Repairs and overseas work of repair yard ...	3.00
Agency fees	0.75
	13.30

APPENDIX II

MAURITIAN SHIPPING INDUSTRY

Colonial Steamships Co. Ltd.

1. M/V Mauritius 2,300 tons DW; built in 1956. Regular sailings every 4/5 weeks to Rodrigues with freight and passengers. Sailings to the Seychelles about 4 times a year, mainly to collect guano for Mauritius. Occasional sailings to Madagascar mainly to collect cattle.

Mauritius Steam Navigation Co. Ltd.

2. M/V Belle Rive 12,396 tons DW; built in 1956. M/V Belle Isle 15,000 tons DW; built in 1971.

3. The vessels, together with at present 12 chartered ships, are employed in the international tramp trade. The company is also engaged in the transportation of export sugar from Mauritius and of rice imports to Mauritius.

Société Mauricienne de Navigation

4. (about 68% of the equity owned by: Compagnie Havraise Nantaise Peninsulaire C.H.N.P.):

M/V Ville de Port Louis 2,360 N.R.T.; built in 1958

M/V Ville de Curepipe 1,359 N.R.T.; built in 1954

M/V Ville de Port Louis: one sailing every 6th week to Reunion, Madagascar and South Africa.

M/V Ville de Curepipe: one sailing every 7th week to Reunion, Madagascar and East Africa.

Main items of transportation are general cargo imports from South Africa, cement in bags from Madagascar and export cargoes from Mauritius.

APPENDIX III

MAIN FEATURES OF PLAISANCE AIRPORT

Runway Etc.

The total paved length of the runway is 8,500 ft. (2,590 m) on a bearing of 117°/297° true. Stopways are provided at each end. Its bearing strength is LCN 75. The parking apron provides bays equipped with underground refuelling hydrants for four large jet aircraft at a time. Works with a view to increasing the number of parking bays to seven have already started.

Building

2. The arrival, departure, and transit lounges can each accommodate approximately 120 passengers.

Navigational Aids

3. The following navigational aids are available:

(i) Medium frequency Non-Directional Beacon (NDB)
(ii) Medium frequency Locator Beacon (L)
(iii) VHF Fan Marker Beacon
(iv) VHF Omni-Directional Radio Range (VOR)
(v) Distance Measuring Equipment (DME)

Visual Landing Aids

4. The landing aids consist of:

Visual Approach Slope Indicators
Orbiting Guidance Lights
Circling Guidance Ligths

Airfield Lighting

5. The airfield lighting installation was completely renewed in 1961 and was further developed and modified in 1965 to cope with the extension to the runway. The mains supply is from the Central Electricity Board but there are also three automatic standby generator sets:

One 60 KVA DORMAN
One 80 KVA DORMAN
One 175 KVA ROLLS ROYCE

Air Traffic Control

6. Air Traffic Control services are provided twenty-four hours daily (on request) throughout the year. "Air/Ground" channels are provided on VHF and HF.

Communications

The following communications services are provided on a 24-hour daily basis:

(i) ***Mobile Service***

Four channels for HF-en-route and two channels for VHF approach and aerodrome control. A selective calling system, which has been established in all aeromobile frequencies, has greatly facilitated ground-to-air communication. A change of frequency has been effected as scheduled in the Mobile (R) Service in accordance with the new HF allotment plan of the International Telecommunications Union. In order to cater for the needs of an extended Mauritius Flight Information Region, five fully-transistorised receivers have been provided on the en-route service to achieve the higher order of sensitivity and signal-to-noise ratio required. The equipment, which has been in use on VHF air-ground for over fifteen years, has been supplemented by a new installation. The provision of recording facilities on all air-ground channels of communication has been deemed necessary and a multi-channel recording system has been installed.

(ii) ***Radio-Navigation Services as listed under Navigational Aids***

Requests have been received from the International Air Transport Association and from individual airlines for the provision of a Distance Measuring Equipment in conjunction with the existing VOR. This has now been installed.

(iii) ***Fixed Service with other Stations of the Aeronautical Fixed Telecommunications Network, Viz., Cocos Island, Australia, South Africa, Bombay, Madagascar and Reunion***

A 10 Kilowatt transmitter has been ordered to establish a direct service with Bombay, as the transit times achieved on the present network are sometimes unable to meet operational requirements. In view of the increased number of flights on the Mauritius/Perth route, consideration is being given to a proposal to establish a direct circuit with Perth.

(iv) ***Meteorological Broadcast***

The broadcast is effected by Radio Teletype on behalf of the Department of Meteorology. The service is now provided on a request basis.

(v) ***Search and Rescue Communication with R.A.F. GAN (Maldive Islands) and Tananarive Rescue Co-ordination Centre***

Plaisance Rescue Co-ordination Centre has direct circuits with the above RCC's. The AFTN is the alternative channel of communication with those RCC's. All mobile units of the

Airport Crash and Rescue Fire Service, including a rescue launch, have been fitted with new all-transistor receivers. The installation and maintenance of all communications and navigational aids equipment is the responsibility of the Telecommunications Staff of the Department.

Airport Fire, Rescue and Safety Services

8. The equipment in use consists of:

4 Foam Tenders carrying a total of 240 gallons of Foam Compound and 2,100 gallons of water and
2 Rescue Tenders equipped with electric saws and
350 pounds of Dry Powder each.

Search and Rescue

9. The Search and Rescue Co-ordination Centre, based at Plaisance Airport, provides alerting and rescue services within the Mauritius Search and Rescue area. Search aircraft are available on deployment from RAF GAN.

10. A rescue vessel and two rescue boats are available from Port Louis Harbour.

11. A fully equipped rescue launch (a gift from the Australian Government) is available to cover the oversea approaches to the main runway.

12. Communications with GAN are made through HMS Mauritius and the Aeronautical Fixed Telecommunications.

Employment

13. The total number of employees is at present 130, of which 20 are casual employees.

Scheduled Services

14. Scheduled services are provided to Europe, Africa, India and Australia by the following airlines:

Airline	*Number of Landings and Types of Aircraft*
B.O.A.C.	Weekly—VC 10
Air France*	Fivetimes Weekly—Boeing 707
Qantas	Fourtimes Weekly—Boeing 707
South African Airways ...	Fivetimes Weekly—Boeing 707
East African Airways ...	Weekly—Super VC 10
Air India	Weekly—Boeing 707
Lufthansa	Weekly
Zambian Airways	Weekly
Balair	Operates regular inclusive tours between South Africa and the Far East, using Plaisance Airport as a technical stop.

*Air France and Air Mauritius Operate in joint flight 5 times weekly to Reunion

Engineering services are provided by Qantas to all airlines whilst Air Mauritius Limited are responsible for aircraft handling.

CHAPTER X

AGRICULTURE

A. Land Use

Of the total land area of the Island of Mauritius of 442,000 arpents, 245,000 arpents are under cultivation* and 23,000 arpents are in forest plantations. Excluding mountainous zones, a further 111,000 arpents are under scrub or trees (other than in forest plantations) of which 25,000 arpents on slopes of less than 13 per cent where cultivation is not precluded by extreme rockiness. Built-up areas occupy 30,000 arpents, roads, other than farm roads, 3,000 arpents; and reservoirs a further 3,000 arpents.

2. Twenty one sugar estates own 190,000 arpents of land, (including 5,700 arpents leased from Government) of which some 137,500 arpents (gross) are under cultivation in holdings of 1,000 to over 10,000 arpents. 90,000 arpents, all under cultivation are owned by over 30,000 small and medium sized agricultural producers, of which two thirds is in holdings of less than 25 arpents. A further 75,000 arpents of urban land and land not in agricultural use are in private ownership, though this includes tracts of land over which property rights are not exercised and which for practical purposes do not belong to anyone. 80,000 arpents are Crown lands.

3. Of the 315,000 arpents of land in the coastal areas and on the Plaines Wilhems, the gross acreage under cultivation is three quarters of the total area—230,000 arpents. A further 5,000 arpents can be brought under cultivation on the West Coast, through providing additional irrigation water but mainly through the more efficient use of the present supply. Elsewhere below the Central Uplands, only some 4,000 arpents not at present under cultivation would appear to be cultivable.

4. On the Central Uplands—mainly above the 1,500 ft. contour—which are generally too cold and wet and where there is insufficient sunshine for sugar cane cultivation, one quarter of the 60,000 arpents of land, excluding mountains, is under cultivation and a further quarter is in forest plantations. Of the remaining 30,000 arpents, 13,000 arpents are on slopes of less than 13 per cent where cultivation is not precluded by extreme rockiness.

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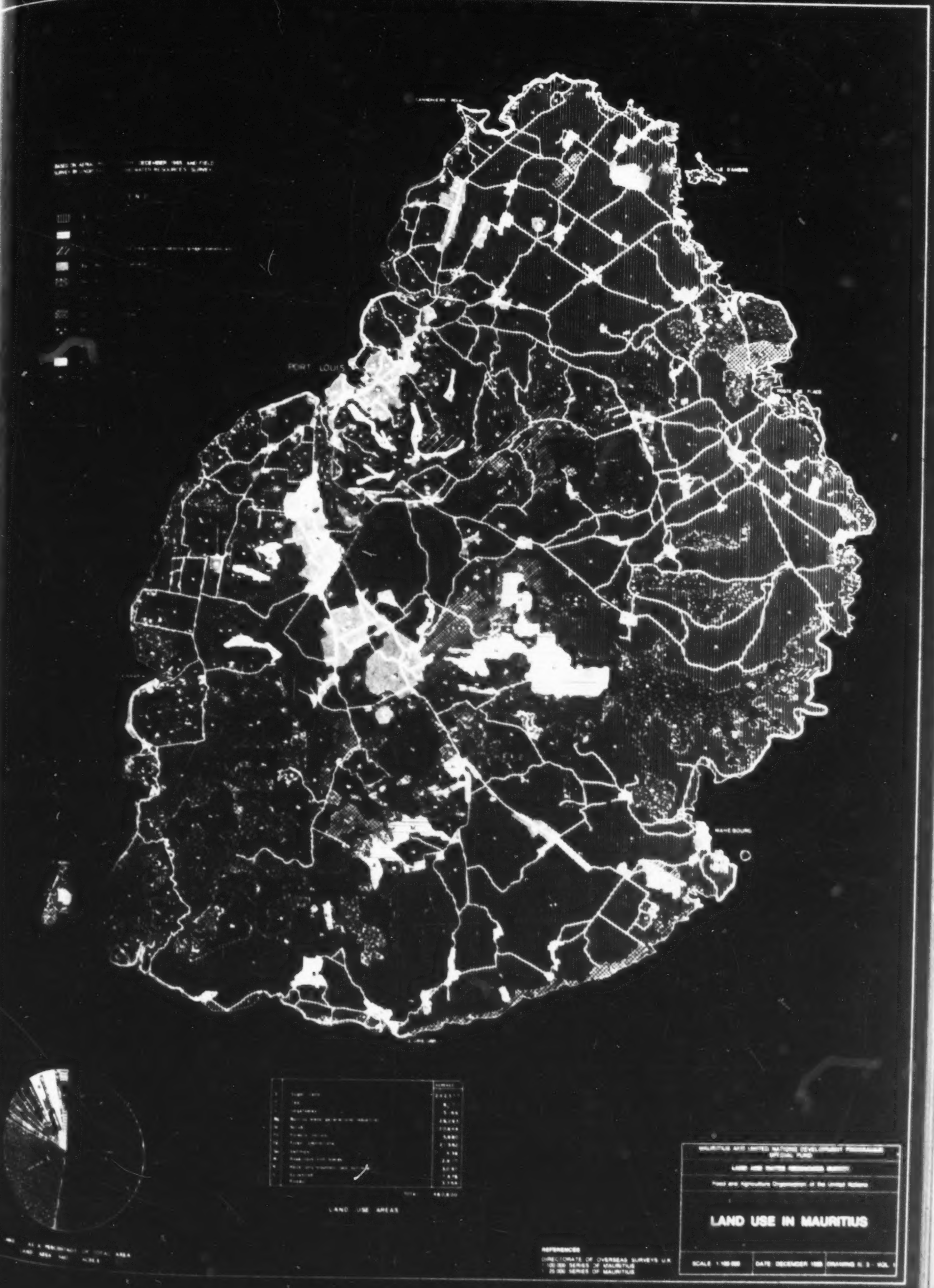
*245,000 arpents is the gross area under cultivation, including rock heaps, farm roads etc. The effective area under cultivation is 215,000 arpents.


BASED ON AERIAL … DECEMBER 1965 AND FIELD
SURVEY BY … WATER RESOURCES SURVEY
PORT LOUIS
MAHEBOURG
Sugar cane
Tea
Vegetables
Scrub
Forest plantations
TOTAL
LAND USE AREAS
… AS A PERCENTAGE OF TOTAL AREA
… LAND AREA … ACRES

MAURITIUS AND UNITED NATIONS DEVELOPMENT PROGRAMME
SPECIAL FUND

LAND AND WATER RESOURCES SURVEY

Food and Agriculture Organization of the United Nations

LAND USE IN MAURITIUS

SCALE 1:100 000 | DATE DECEMBER 1969 | DRAWING II.3 - VOL. I

REFERENCES
DIRECTORATE OF OVERSEAS SURVEYS U.K.
1:100 000 SERIES OF MAURITIUS
1:25 000 SERIES OF MAURITIUS

Area under Cultivation 1965/66

	Total area	*Net area under crops*
	Thousand Arpents	
Northern Plains	84	55
West Coast	42	14
East	56	38
South	88	66
Plaines Wilhems	45	26
	31	199
Central Uplands*		15
Mountains	61	—
Port Louis	5	—
Mauritius	442	214
	Thousand Hectares	
Mauritius	187	94

5. Following up the work of the FAO Land and Water Resources Survey (1965-1969), the Mauritius Sugar Industry Research Institute (with FAO assistance) is preparing a land capability map, which will enable a rational land use plan to be prepared for those parts of the Island which can still be developed for crop production, forestry plantations or pastures and for changes in the pattern of land use, where these would lead to higher levels of output.

6. The structure of land holding in Mauritius is polarised, with, at one end, a little over half the area under cultivation farmed by twenty-one estates cultivating between 1,000 and 11,000 arpents each and, at the other end, over 25,000 smallholders cultivating 20 per cent of the acreage under crops in holdings of around 1½ arpents and for the most part even less; 40 cane planters and 23 tea growers with holdings of some hundreds of arpents farm 10 per cent of the cultivated acreage and 2,500 small and medium sized farmers, with holdings ranging from five arpents upwards, farm 20 per cent of the land under cultivation.

7. The size of the estates is determined not by the economies of scale which are to be obtained in cane cultivation, but by those in sugar milling; hence the amalgamations that have brought the existing units to their present size. The managerial ability to organise a large agricultural labour force in the production of commercial crops is not, in the present situation, a factor in achieving high levels of output, nor is the ownership of (by Mauritian standards) large tracts of land in itself a commercial advantage for the estates themselves. Even if labour is inexpensive in Mauritius, it has ceased to be so cheap that it can virtually be ignored as a cost of production. At present wage rates, the cost of labour is about half the cost of a ton of cane. The estates do not make their profits by converting labour and other inputs into sugarcane in their fields, but by converting cane into sugar in their mills.

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*Mainly above the 1,500 ft. contour.

8. The technical and managerial ability which is available to the estates as substantial employers and which is not available to the smaller producers enables them to achieve yields per arpent which are 40 per cent higher, on average, than those obtained on the medium sized or smaller holdings. By controlling larger acreages, investment opportunities are open to them to raise agricultural productivity which are not open to smaller producers or which would be relatively more costly. The fact that the estates produce not just sugarcane but sugar affords them the incentive to push production up to the level at which marginal costs are more or less equal to marginal returns for the economy as a whole, an incentive which cannot be extended or which it would be complicated to extend to outgrowers within the present structure of production. The effect of the ownership of slightly more than half the cane acreage by a few large estates is, however, that the technical and managerial ability which is available to the estates is not, by and large, available to the sugar industry as a whole.

9. This gap between the technical know-how and organisational capacity which is at the disposal of agriculture in Mauritius and that which is available to the smaller producer cannot be filled by making some of the production aids which are found within the large enterprise available to small scale and scattered producers through a government department. The technical and economic advice and even the credit which can significantly enlarge the scope for increasing agricultural productivity within the management resources of the individual peasant farm in many African and Asian countries cannot have the same effect in an economy which is not technically backward. Nor would it be practical or necessary for a government department to attempt to duplicate the technical services and organisational expertise already available in the estate sector for an acreage equivalent to half a dozen of the larger estates, but which is scattered all over the Island. Not only would this be difficult, it would also be costly.

10. The larger size of the production units of the estates does not correspond, in Mauritius, to the optimum size of management unit for organising labour in the production process. This size, under present circumstances, is some tens or at most hundreds of arpents in Mauritius; it can even be less but not so small as to constitute less than a full time occupation for the farm operator. It is unnecessary, in order to attain levels of agricultural productivity close to the maxima which can be reached in the present state of knowledge, for large production units actually to own the land and to be in direct control of the cultivation of the fields; the existence of such units covering more than half the cultivated acreage results in the technical expertise and organisational ability in the agricultural sector on the Island being for the greater part confined to production on the large units, and not being available to agriculture on the Island as a whole.

11. To make the maximum use of the land resources of the Island it will be necessary, as a long term programme, to divorce the technical and organisational expertise at present at the disposal of the large estates from the actual ownership and cultivation of land in order to make it available, on a commercial basis, to agriculture in Mauritius as a whole.

B. Climate

12. The climate of Mauritius is determined by its oceanic position and its location at 20° South in the belt of the southeast trade winds. These winds blow strongly throughout the winter months, May to September, but in the summer months of November to April they are weaker and veer to East-South-East and East. Summer is the cyclone season, with the greatest frequency of cyclones being in January to March.

13. Rainfall is markedly seasonal, particularly in the coastal regions. The wet season lasts from December to May. The Central Plateau of the Island receives over 500 cm. of rain (200 inches) a year, but on the coast the average annual rainfall varies from 190 cm (75 inches) in the South and Southeast to less than 100 cm (40 inches) on the Northwest coast. The wettest months are January to April; the driest from July to October, when the cane is harvested. Rainwater percolates through the soil and is carried off in the ravines without causing much flood damage even in very wet years.

14. At sea-level the maximum day and minimum night temperatures during the hottest months average 31° and 24°C; in winter they average 25°C and 20°C.

C. Crop Production

15. Of the gross acreage of 245,000 arpents under cultivation, the net crop acreage is 215,000 arpents. Of this 204,000 arpents are under sugar cane and 10,000 arpents under tea. 10,000 arpents (including cane lands planted to cash crops between planting cycles and crops planted in the interlines between sugarcane) are under root crops, vegetables, bananas, pineapples and tobacco.

16. The configuration of Mauritius is that of a central plateau, ringed by mountains rising to around 2,000 feet, with rather steep escarpments to the West and Southeast and a rather extensive plain stretching to the North. The prevailing winds in winter are from the Southeast—analogous to the " trade winds " of the Western hemisphere. The drier areas of the Island, those in which rainfall is inadequate for crop production to reach its full agricultural potential, are therefore on the Western Coast and on the Northern Plains and around the fringes of the Eastern and Southern parts of the Island. Of the area considered to require irrigation for crop production to reach its full potential, two thirds is on the Northern Plains and on the Western Coast.

17. In the coastal areas and on the Plaines Wilhems, the practical limits of cultivation, in so far as these are determined by the investment which can be undertaken within the individual enterprise, were virtually reached in the mid-sixties. Some further extension in the area under cultivation, particularly on the West Coast is possible through public investment in increasing the supply of water for irrigation and through a rationalisation of the use of the existing supply.

18. The main increase in crop production in these areas must, however, come from higher yields on the acreage already under cultivation and the more intensive use of cane fallows between planting cycles and cane interrows. This again is largely a matter of making fuller and more effective use of the Island's water resources. The FAO Land and Water Resources Survey team considered that, for the net cultivable area of 210,000 arpents below the Central Uplands to reach its maximum productive potential, 70,000 arpents would need to be under irrigation. Of this, 35,000 arpents are irrigated at present, but on much of this land, the use of water and irrigation practices would need to be improved, if the full agricultural potential of these areas is to be realised. Of the area considered to require irrigation for crop production to reach its full potential, two thirds is on the Northern Plains and on the Western Coast.

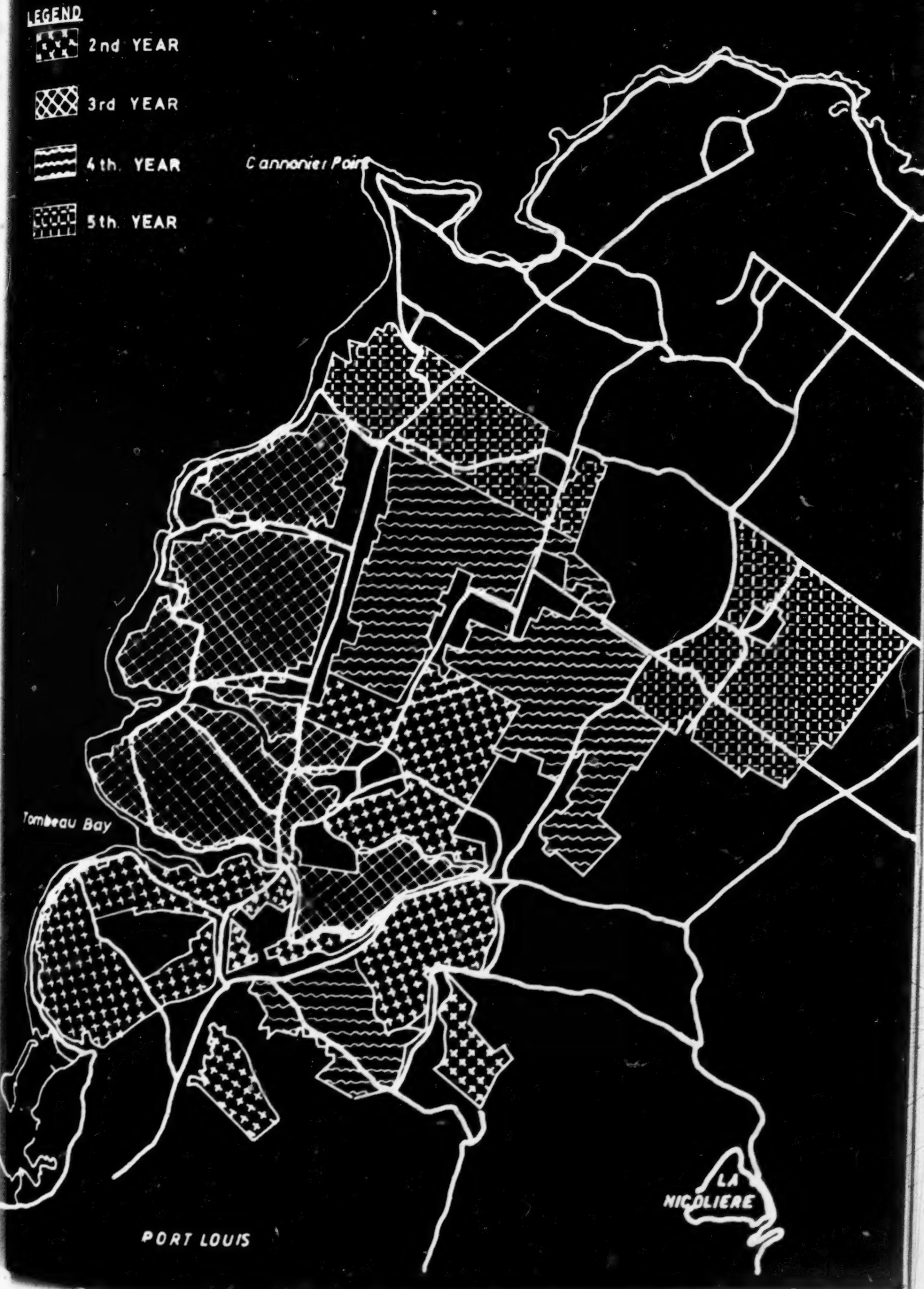
19. The FAO Land and Water Resources Survey team has examined and established the technical feasibility of a major irrigation project for raising crop yields and (on the Western Coast) for bringing uncultivated land into production. On the Northern Plains an area of 12,000 arpents could be brought under irrigation, in addition to the 8,000 arpents which are irrigated at present. On the Western Coast the FAO team has designed a project which would bring an additional 5,000 arpents under cultivation but which would also improve the supply of water and irrigation practices on most of the 12,500 arpents already under irrigation.

20. Both projects would show a high return, in terms of foreign exchange earnings or savings in relation to foreign exchange costs. The project on the Western part of the Northern Plains is the more difficult one to carry out, as a large proportion of the land to be irrigated is in very small holdings, which would need to be grouped into blocks of around 100 arpents for the purpose of using the irrigation water. Because of the larger number of holdings involved on the Northern Plains project, this project would also increase the incomes of a larger number of farm families.

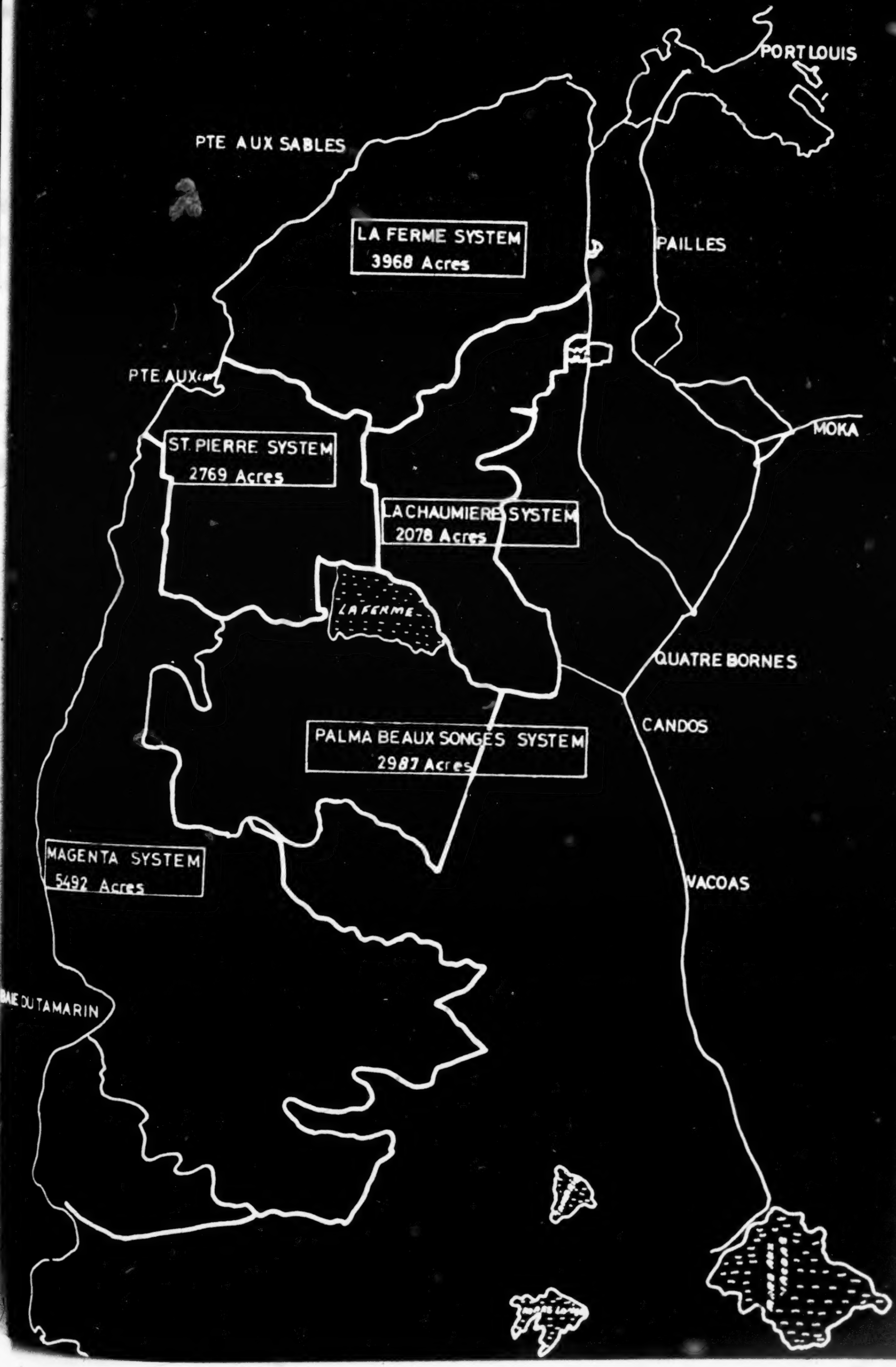
21. Outside these two project areas, crop production on a further 20,000 to 30,000 arpents, mostly on smallholders' lands, could be substantially increased through the supply of irrigation water, mostly from groundwater supplies.

NORTHERN PLAIN IRRIGATION SCHEME

PHASING OF IMPLEMENTATION


LEGEND
2nd YEAR
3rd YEAR
4th. YEAR
5th. YEAR
Cannonier Point
Tombeau Bay
PORT LOUIS
LA NICOLIERE

WESTERN COASTAL REGION IRRIGATION SCHEME
THE 5 SYSTEMS


PORT LOUIS
PTE AUX SABLES
LA FERME SYSTEM
3968 Acres
PAILLES
PTE AUX
MOKA
ST. PIERRE SYSTEM
2769 Acres
LA CHAUMIERE SYSTEM
2078 Acres
LA FERME
QUATRE BORNES
CANDOS
PALMA BEAUX SONGES SYSTEM
2987 Acres
MAGENTA SYSTEM
5492 Acres
VACOAS
BAIE DU TAMARIN

(i) *Sugar*

22. Apart from irrigation the main factors in increasing yields per arpent are land improvement and improved cultural practices on the smaller holdings. In terms of sugar, yields of cane are, on average, 3.2 tons of sugar per arpent harvested for the Island as a whole. Yields of sugarcane are directly correlated with the size of holdings and are one third lower, on the whole, on holdings of less than 100 arpents than on the large estates.

Sugarcane Yields per Arpent 1962–1967

	Area Harvested Thousand arpents	*%*	*Cane Yields M. tons / arpent*	*% of Yields on Estates*
Estates*	100.5	52	31.7	100
Planters with 200–700 arpents ...	18.1	9	27.9	88
Planters with 100–200 arpents ...	4.4	2	24.5	77
Planters with less than 100 arpents	64.4	33	20.4	64
Metayers†	6.9	4	17.6	56
TOTAL ...	194.3	100	26.9	85

23. One of the reasons for the lower yields on the smaller holdings is that these add up to 30,000 management units and the variation in yields is greater, and the average for the group therefore lower, than on the twenty one estates. The main reasons for the lower yields on the smaller holdings are, however, a lesser use of irrigation in the drier areas, less adequate land preparation, longer planting cycles, with a progressive decline in yields in successive ratoons and a less rapid introduction of higher yielding and disease resistant varieties, less adequate weeding and a lower and unbalanced fertiliser usage.

24. Mauritius is a volcanic island in which there have been two major and widely separated periods of volcanic activity. The first of these threw up what are now the weathered down jagged mountains ringing the central plateau of the Island. The second strewed the central plateau and the coastal plains with rocks and boulders, making agriculture in Mauritius the rockiest in the world. On cultivated land, the amount of rock heaped or lying on the surface is about 2,000 tons per acre (5,000 tons per hectare).

25. On the estates, surface rocks have, in the second half of the twentieth century, been bulldozed into heaps with American crawler tractors except in the drier areas which are without irrigation where they are piled into walls along the fields to conserve moisture. Cane is re-planted every eight to ten years and the land cleared of surface rocks between each planting cycle.

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*estates owned by sugar mills ranging from 1,000 to 11,000 arpents

†tenants leasing land from estates

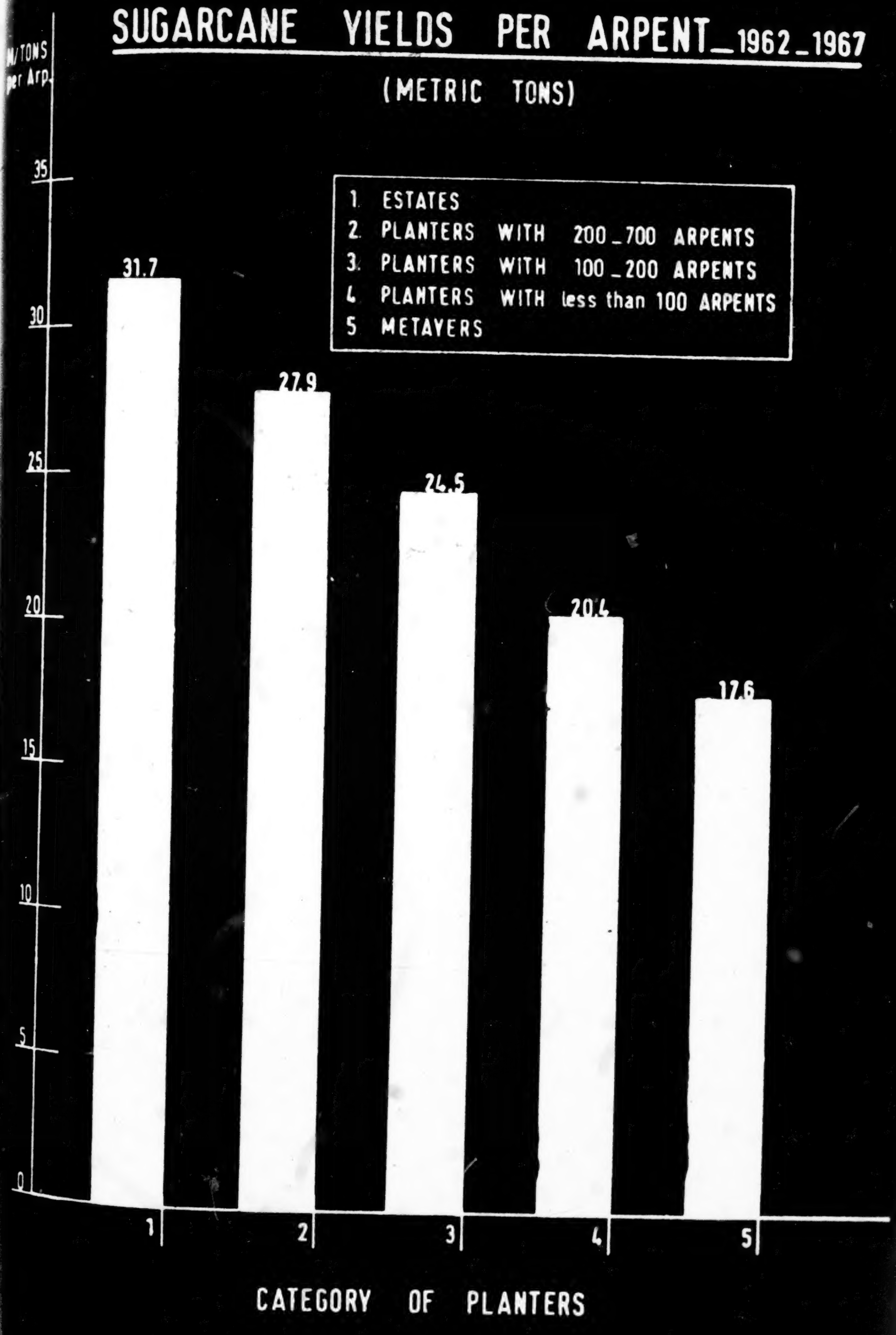
26. On the smaller holdings, land preparation with crawler tractors and replanting is more costly. The land is therefore less well prepared and cane is replanted only every fifteen to twenty years. Yields are therefore lower than on the estates and larger holdings. One third of the holdings of less than 25 arpents are at present planted with varieties which have been found to be particularly susceptible to a virus disease which, if not eradicated, is in danger of affecting in the course of time varieties which have hitherto been found to be resistant to this disease. A replanting programme, which will have to be largely financed from public funds, is therefore being launched in 1971 to uproot all cane of the susceptible varieties in the course of three years. At the same time, with the much more extensive use of crawler tractors on small-holders' lands—stepping up the acreage derocked, ridged and furrowed from 2,500 to 10,000 arpents a year—this will greatly improve the standard of land preparation and lead to a shortening of planting-cycles on the smaller holdings.

27. It is expected that these measures, (the adoption of improved cultural practices on the smaller holdings and the provision of medium and long term credit for smallholders through the co-operative societies) will increase cane production by one million metric tons a year by the end of the decade. In 1966-1969 the sugar crop averaged 635,000 metric tons, tel quel. Towards the end of the 1970's it is expected that the sugar crop will average 770,000 metric tons a year. In a normal, that is to say cyclone free season, the size of the crop can then be expected to be 835,000 tons.

28. If Mauritius is to develop, it must increase its output of those products which it can produce most efficiently and cheaply and for which there is a market. One of these, as has been demonstrated over the last 140 years, is sugar. The increase in the production of sugar which is considered feasible in Mauritius over the next ten years would amount to an increase of 2 per cent a year over present levels of production and a total increase over the ten years equivalent to 1 per cent of the present size of the world export market.

29. 60 per cent of the Mauritius crop is at present sold in the United Kingdom under the Commonwealth Sugar Agreement at prices which in recent years have stood at Rs 630 per metric ton, f.o.b. Port Louis; 30 per cent is sold in other markets, principally Canada, at unregulated prices; 5 per cent is sold on the domestic market; and a mere 3 per cent—the lowest proportion for any country with a quota on the U.S. market—is sold in the United States at around Rs 800 per metric ton, f.o.b. Port Louis. The average f.o.b. value of exports to all destinations over the last few years has been Rs 540 per metric ton.

30. The question is not whether Mauritius can sell any larger quantity of sugar than it is able to produce. To suggest that importing countries will cut down on their purchases by boosting further a domestic production of beet sugar which is already 2½ times as costly as what is



SUGARCANE YIELDS PER ARPENT_1962_1967

(METRIC TONS)

considered by importing countries to be an adequate return to labour and capital in cane sugar exporting countries is to take altogether too cynical a view of the disregard by governments of importing countries of their own economic interests and those of countries which are dependent on sugar exports for their livelihood.

31. The question of sugar exports for Mauritius is entirely one of price. The ridiculous prices which have prevailed in the later 1960's and which bore no relation to costs of production in the Caribbean or elsewhere were largely the result of trade policies which the governments of the countries responsible for these policies have now realised were not in their own economic interests. For planning purposes the marginal price of sugar to Mauritius—that at which any additional quantities produced can be sold on world markets—is taken to be £32.50 per long ton, f.o.b. (Rs [illegible] per metric ton). This is 10 per cent above the notional " floor price " of the International Sugar Agreement.

32. It is necessary to make some such assumption in order to evaluate the respective benefits of public investment which would result in an increased production of sugarcane. For this reason, the assumptions made of the marginal export price to be used for planning purpose are deliberately conservative.

33. The market for the Mauritius sugar crop is determined not by impersonal and hostile forces but, in the main, by governments whose interest in the political and social stability and economic progress of Mauritius is real. Agreements on prices and quantities to be sold are reached in the context of decisions which have a wider implication than the interests of Mauritius alone. In this context the importance of the returns from this crop to the economy of this Island is not, however, a mere cypher. As the prices at which Mauritius sells its sugar are and will remain throughout the 1970's of vital importance to the Island's economic development, efforts to negotiate better prices for the Mauritius sugar crop, and to secure more realistic quotas in the higher priced markets, will be an important, indeed essential, component of the Government's economic development strategy for the next decade.

34. Over the four years 1966-1969, the f.o.b. value of the sugar crop, including molasses, was Rs 340 million a year. On the assumption of the marginal price of sugar to Mauritius made above, the f.o.b. value of the crop would increase to Rs 400 million a year by 1980.

35. The present basis of the share-out of the proceeds from sales of sugar between millers and outgrowers is that the latter receive 68 per cent of the value of the sugar and molasses produced from their canes. This is the value of the sugar and molasses delivered to the docks, after allowing for statutory deductions and selling expenses. A larger share-out to the outgrowers would be reflected in land values and would make any redistribution of land holding that should be allowed or encouraged on economic grounds more costly to the purchaser and to the economy.

36. All the same, because of the falling marginal cost curve in sugar milling and the rising marginal cost curve in cane production, any further increase in cane production will result in proportionately greater net returns, on the present share-out basis, to sugar millers than to outgrowers. As much of the investment needed to raise cane yields will need to be in the public sector and as, in the private sector, the investment will need to be proportionately greater in the small farms sector than on the estates, it would, quite apart from considerations of an equitable distribution of additional sales proceeds, distort investment incentives, if such investment were, for the greater part, simply to result in windfall profits to sugar millers.

37. While it is not proposed to change the basic share-out ratio, adjustments will, in effect, need to be made in order to provide the incentives to outgrowers to incur the additional investment and higher annual costs needed to increase their cane production. There are two ways of doing this. Outgrowers will be paid a bonus, out of the total proceeds available to the industry, over and above the average cane price, where their yields per arpent are significantly higher for the factory area for that season, to compensate them for the higher costs incurred and to act as an incentive to incur such higher costs. Alternatively, or in addition, a somewhat higher proportion of the total sales proceeds of the sugar crop will be syphoned off into public funds to be used to reduce the cost to outgrowers, and in particular to the smaller planters, of the investment needed to raise their output. Government will attempt to negotiate better prices for the sugar crop and to negotiate higher quotas in the more highly priced markets on this specific understanding. The proposed sugar authority will execute such Government policies.

(ii) *Tea*

38. Next to sugar the most important export from Mauritius is tea. Tea has been grown on the Island since the 1800's, but only began to assume commercial importance in the 1950's. 10,000 arpents, mostly on the Central Uplands, are planted to tea, of which half has been planted in the last eight years. 5,000 arpents are held by half a dozen estates with their own factories and thirteen planters who were allotted Crown land, government loans and other facilities for growing tea and other private persons; 1,300 arpents have been distributed to 430 smallholders and the balance is being maintained by the Ministry of Agriculture for distribution to small holders. A further 12,000 arpents of Crown land have been demarcated for tea planting to be cultivated by smallholders in plots of 1½ arpents. The planting programme has been phased over the six years 1971-1976.

39. Yields of mature tea in Mauritius are 7,500 lbs of green leaf per arpents or 1,500 lbs of made tea. High yields can be expected from improved planting material, but as it will take time to select and propagate high yielding clones, this will not have an appreciable effect on average yields until the 1980's.

10. Current production is $6\frac{1}{2}$ million lbs of made tea, of which 1 million lbs are sold on the domestic market. At present half the exports goes to the Republic of South Africa and the other half is consigned to the London market. On average, Mauritius tea is selling on the export market at an equivalent c.j.f. London price of 3/9 (19p) a lb. At present prices the crop is worth Rs 15 million a year. The crop can be expected to reach 30 million lbs by 1980. Allowing for some weakening in prices—by 10 per cent the f.o.b. value of the crop would then be Rs 60 million.

(iii) *Other Crops*

11. The value of crops other than sugar and tea grown on the Island is Rs 30 million a year at producer prices. Production is mostly in the hands of quite small cultivators, many of whom rent land for a crop season, though potatoes and groundnuts are also grown by the sugar estates, on lands on which sugarcane has been uprooted but not yet replanted, in the interrows of virgin cane plantations and in those of the first and second ratoons.

12. Basic food crops—wheat and cassava—were grown on the Island in the eighteenth Century and the acreage under food crops—principally maize, rice, potatoes and other root crops—reached 17,500 arpents during the last war. The consumption of the main staples—rice and wheat—is 100,000 tons a year, of which two thirds is rice and one third wheat flour. Lately, with government encouragement, there has been a renewal of interest in rice cultivation, much of it on marshy land not at present being cultivated. Experimental work on the crop has been carried out by the Ministry of Agriculture and Natural Resources with the assistance of the Chinese (Taiwan) and Indian Agricultural Mission since 1969. Paddy is milled at the Government feed mill; prices paid to growers are somewhat above the equivalent of those at which the better qualities of rice are currently being imported by traders.

13. The production of Irish potatoes and other starchy roots is 7,000 tons a year (1966-1969 average) and supplies three quarters of the domestic market. Prices at the producer level are Rs 550 a ton on average.

14. The production of vegetables is around 30,000 tons a year worth Rs 17 million at producer prices. Local production supplies 70 per cent of the domestic market. Imports are mostly pulses.

15. The production of bananas exceeds 10,000 tons a year worth Rs 3 million at producer prices, and the production of pineapples is Rs $\frac{1}{2}$ million a year. There is a substantial, unrecorded, production of tree fruits and coconuts.

16. The local tobacco crop of 500 tons supplies 90 per cent of the domestic market for cigarettes. At Malawi prices for equivalent grades, the crop may be valued at around Rs 2 million.

17. About half the acreage under crops other than sugar and tea is on cane lands. There are in all the equivalent of some 11,000 arpents of land available on sugar estates and plantations for cropping during the

fallow period between uprooting and replanting sugar cane and as interline crops in virgin canes. A further 9,500 arpents of ratoon interlines cannot for the most part be used for crop production at present.

48. Allowing for some increase in the acreage brought under cultivation for crops such as rice, and for the development of mixed farming on some of the land on the Central Uplands at present under scrub, and allowing for some marginal shifts out of cane cultivation to more high value crops, as export opportunities develop and the domestic market for fresh vegetables expand and as improved irrigation and land improvement bring about a shift in the conditions of supply for the smaller cultivators, the output of crops other than sugar and tea can certainly be doubled over the next ten years to Rs 60 million a year.

49. Apart from bringing some more land under cultivation in addition to tea in areas which are not suitable for sugar cane, and a more intensive use of cane lands for the production of additional crops, some shift can be expected to take place from sugar cane to more high value crops, which also generally require higher labour inputs per arpent. With irrigation and with better land preparation, it will become an economic proposition to grow alternative crops, on lands at present under cane, which are now impractical or unprofitable. The possibilities of increasing the value of crop production through shifting from sugar cane to more high value crops are not, however, unlimited.

50. There are small, but rapidly growing, exports of fresh ginger, high priced fruits and fresh vegetables and cut flowers. Because of the distances over which they have to be transported to export markets and, in the case of perishable or easily damaged products, because of the high cost of transportation, these need to be products with a high value in relation to their weight. As is indicated by recent export performance, there is certainly scope for a further expansion in sales, although, because of price considerations, markets are somewhat limited.

51. As far as the domestic market is concerned, the main staples of consumption in Mauritius—rice, wheat and the lower priced vegetable oils—are, on the whole, low value crops in terms of value per arpent, though a certain amount of rice can be grown on land which is unsuitable or less suitable for other crops. Among the oilseeds, groundnuts, which are particularly suitable as an interrow crop between sugarcane, would appear to be the most promising, though work is also being undertaken on soybeans. The crop could be sold in part as confectionery nuts, with the balance crushed for oil for export and cake sold on the local market for livestock feed. Domestic production of vegetables and root crops accounts for 70 per cent of the total supply. There is scope for increasing this proportion somewhat, particularly through the provision of improved storage facilities for potatoes and onions, and the market will expand with the increase in population, though the demand

for vegetables in Mauritius would seem to be little influenced by changes in consumer income. For tobacco the local market is already saturated, and price and other considerations rule out tobacco as an export crop. Consumption in Mauritius is already high and is not much influenced by changes in consumer income.

52. In considering ways of bringing about increases in the value of crop production through changes in the cropping pattern, one must not lose sight of the fact that the know-how required to grow high value crops, and to sell these on distant markets, is expensive. Production and marketing need to be as efficient as in alternative sources of supply. It is costly to acquire this know-how for crops involving only small acreages. An impressive amount of know-how on the production side has been and is being acquired. It is important that this know-how should be further developed for those crops which show promise with regard to their agricultural potential and at the same time seem likely to find profitable outlets on export markets or on the home market. In the case of production for the home market, it is not of course profitable, for the economy as a whole, to develop lines of production which are remunerative to individual producers simply through pushing up consumer prices, even where production is comparatively labour intensive. It is not, in the case of crop production, the opportunity cost of labour but the opportunity cost of land which, in Mauritius, determines the value of agricultural production to the economy.

53. A wide range of crops is in fact grown in Mauritius and for the most part standards of cultivation are high. It is necessary, however, in the public sector programme for agricultural development, to give emphasis to the introduction of new crops—for instance asparagus—and to the development of high yielding varieties and technically high standards of cultivation for crops where substantially higher yields would seem to be attainable—for instance root crops—in order to enable agricultural producers to take advantage of any new opportunities that are offered on world markets and to provide the flexibility that will be needed in crop production to adjust to longer term changes in relative prices and costs.

54. It would be unprofitable, however, to plan now for changes in the pattern of crop production on the basis of speculative views that may be taken of the price structure for the Mauritius sugar crop in the latter part of the decade. Investment that will be needed to increase the output of sugar cane is not, with some minor adjustments (such as the type of irrigation equipment used), specific to cane any more than to other, annual, crops that may be grown in the same area. The increase in cane production of the order envisaged would not require additional milling capacity to be installed, though the concentration of milling capacity into fewer and larger units would need to continue, in order to reduce production costs for the Island's main crop.

55. In the planting cycles which have been found most suitable and economic for the Island, some 20,000 arpents are replanted to cane, or should be replanted every year. It would be possible, therefore, to shift out of cane production at any time, should there be a sudden long term deterioration in the market prospects for the Mauritius sugar crop or should the quotas which can be negotiated under various international agreements fall far short of current levels of production. It would be difficult, however, with all the efforts being made and proposed for developing the techniques of production and for finding markets for alternative crops, to switch any extensive acreages out of sugar cane into crops with a comparable value per arpent. Any marked or sudden deterioration in prices for Mauritius sugar could not fail, therefore, to have a serious adverse effect on the economic development of the Island.

(iv) *All Crops*

At the price assumptions made above, the value of crop production at f.o.b. or producer prices (or equivalent c.i.f. prices in the case of tobacco), would increase from Rs 385 million in the late sixties to Rs 520 million by 1980. To indicate the scope which exists for shifting production towards meeting the requirements of the domestic market, it may be relevant to point out that the total domestic market for food derived from crop production, at c.i.f., ex-factory or producer prices, is Rs 140 million a year. Of this imports account for Rs 95 million, of which two-thirds is grains and one sixth is fats and oils.

D. Livestock

56. The consumption of food in Mauritius is Rs 200 million a year at import, producer or ex-factory prices. The consumption of livestock products is Rs 45 million a year, of which half is from local production and half imported.

57. Milk consumption is equivalent to 50 litres per person per year. Imports of dried and condensed milk are equivalent to 25 million litres of fresh milk. Imports are mostly Australian, New Zealand and British dried milk powder, Australian evaporated milk and South African and British prepared milk based foods. Cheeses are all imported, mostly from Australia, the Netherlands and France.

58. The consumption of fresh and frozen meat, other than poultry, in Mauritius is 6,000 tons, carcass weight, a year—7½ kg per head of the population. Of this 60 per cent is beef, a quarter mutton and goatmeat and 10 per cent pork. 1,750 tons, in terms of carcass weight, are imported from Madagascar, mostly in the form of live cattle. Australia supplies 1,500 tons a year, in terms of carcass weight, of which two thirds is frozen mutton. Imports of meat from Africa, mostly frozen beef, are 200 tons a year. In addition to live animals and frozen meat, Mauritius imports tinned and other processed meats to a value of Rs 2 million a year.

59. The domestic livestock industry makes excellent use of resources which would otherwise be waste products, such as cane tops and fodder grasses, transfers fertility from waste land to land under intensive cultivation, and makes virtually no demands on scarce resources such as land and capital. In contrast to crop production, livestock production in Mauritius has, however, remained technically backward.

60. Apart from a few milk herds on some of the sugar estates, a few beef herds, a few commercial pig breeders and a recently established broiler industry, livestock production on the Island of Mauritius is a part-time occupation. There are, or were a few years ago, some 20,000 cattle owners with one or two, rarely more than three, animals each; goat owners usually have two or three goats; the average number of birds per household engaged in poultry keeping is seven. Income from dairying, the sale of stock and of manure accounts, on average, for one eighth of the total household income of cow keeping households, and these are the householders at the lower end of the income scale in the rural areas. Labour productivity in livestock production is low by any standards. Returns to labour in dairying work out at an average of one Rupee for an eight hour day; in goat keeping returns to labour are about half this amount.

61. Average milk yields are 4½ litres a day per cow in milk or an average of three litres a day throughout the year per cow or heifer aged two years or over. With an average of one cow or heifer per cattle owner, the income from milk, at 1,000 litres a year (including household consumption) and a producer price of 35 cents a litre, is Rs 350 a year. The animals are not grazed and for a cattle owning household with one cow and followers the members of the household spend over 50 hours a week between them in fodder collection, milking and related chores.

62. The production of fresh milk in Mauritius was around Rs 7 million a year in the mid-sixties at producer prices but has been declining. The production of meat (excluding poultry) from local animals is 2,000 tons, carcass weight, a year, including illegal and unrecorded slaughter, worth Rs 5 million at producer prices. Shipments of live animals from Rodrigues, mostly pigs, are equivalent to a further 400 tons of meat, worth Rs 1 million at producer prices. Virtually the entire market for poultry meat and eggs in Mauritius is supplied by local production. The output of the poultry industry, at producer prices, is probably of the order of Rs 10 million a year, of which Rs 2¼ million from commercial broiler production. The economic importance of the poultry industry to Mauritius is therefore about equal to that of the cattle industry.

63. The increase in consumer incomes envisaged for the 1970's can be expected to result in a greater proportionate increase in the demand for livestock products than for food derived from crop production. Assuming that the demand for livestock products grows by 5 per cent a year, it would not be unrealistic for livestock production to double over the next ten years, to supply two thirds of the domestic market. As far as

production for the domestic market is concerned, there would appear to be at least as much, if not rather more scope for increasing livestock production in Mauritius than for increasing crop production.

64. An increase in livestock production can, however, only come about through a shift in livestock production from a very part-time occupation to a full-time occupation with a productivity of labour comparable to that in other labour intensive sectors of the economy. As livestock is the marginal economic activity in livestock keeping households, no significant increase in output can be expected under present systems of management in response to an increase in demand resulting from higher consumer incomes. Increased output would, under present systems of management, require greater labour inputs, and these would not be forthcoming if there were increased employment opportunities elsewhere in the economy.

65. The development of the livestock in Mauritius requires the establishment of full-time, technically efficient, mostly small-scale enterprises. 10,000 such enterprises with a net output of Rs 20 million a year will be established over the next four to five years. These enterprises will, for the most part, be diversified livestock enterprises, in order to make the best use of the capital and feed resources and labour skills available to the enterprise. In certain areas livestock production will be combined with the production of vegetables and root crops, fish farming and forestry.

66. A technically more efficient livestock industry with a higher productivity of labour will require greater purchased inputs per animal, particularly of livestock feeds, the raw materials for which will largely have to be imported. These higher costs will only in part be offset by higher levels of output per animal.

67. While yields of milk from the present herd—basically a Norwegian stock—can be approximately doubled with better feeding, it is out of the question for Mauritius to produce milk as cheaply as New Zealand or to increase its output of fresh milk at present producer prices.* The demand for fresh milk is, as is indicated by consumer expenditure surveys, far more responsive to changes in consumer income in Mauritius than the demand for dried milk powder and evaporated milk. The structure of the dairy industry in Mauritius will, therefore, need to be shifted from supplying a meagre supplement to the incomes of a few thousand householders to providing a family income for full-time livestock enterprises supplying a higher quality and more hygienic product, which can sell at a higher price than that prevailing at present for fresh milk. The production of fresh milk in Mauritius can only be of more than marginal benefit to the economy if it is a different and higher priced commodity than imported dried milk powder and evaporated milk.

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*23½ Pf. per litre or 24 cents U.S. per U.S. gallon.

68. The production of beef in Mauritius will remain a by-product of the dairy industry, as in other countries in which the land area is intensively utilised for crop and livestock production. As a milk cow provides an income of Rs 350 a year, even at present producer prices for milk, and an animal raised for beef provides much the same total income over a period of three years, it always pays to use available feed and labour resources for keeping milk cattle than for raising animals for beef. In order to make the fullest use of the potential of the dairy industry to supply a part of the market for beef, the FAO Meat and Milk survey is investigating the techniques and economics of buying male calves and surplus female calves from dairy farmers after weaning and raising them mainly on grass—under Mauritian conditions probably with zero grazing—to be returned for subsequent fattening before slaughter.

69. Just as there is a marked consumer preference for fresh milk over dried milk powder and evaporated milk, there is also in Mauritius a marked consumer preference for fresh meat over frozen meat. The cheapest meat on the market is frozen Australian mutton. Boneless mutton sells at a landed price of Rs 2.35 a kg. Home-killed goat meat and mutton sell at Rs 4.60 a kg retail and account for one quarter of the total quantity of mutton and goat meat sold. There is room therefore for goats to continue to play a part in the livestock economy. The local stock is being improved through the introduction of breeds from India and the Sudan. Sheep are more difficult animals to look after and are unlikely to offer much prospect under Mauritian conditions; they play a significant part in the rural economy of Rodrigues, which is rather drier.

70. In a country with strictly limited land resources for grazing or cheap fodder production and with an abundant supply of labour, there is a distinct advantage in rearing small stock, which are efficient converters of feed into livestock products, as compared with cattle. The demand for fresh pork in Mauritius is met in about equal shares by combined Mauritian and Rodriguan production; imports of pigmeat are mostly in the form of bacon, ham and sausages, which are not produced locally. Local production also supplies practically the entire domestic market for poultry and eggs. However, Mauritius is virtually " self-sufficient " in pork and poultry meat only at retail prices which are as high for pork and poultry as for beef. There is scope, therefore, for increasing output and employment in pig, poultry and rabbit production and expanding the volume of sales through lower prices. In the case of pork there is considerable scope for bringing down prices at the retail level without reducing prices to producers.

71. With an attainable increase in the value of livestock production comparable to the increase which can be expected in the value of all crops put together, other than sugarcane and tea, there will need to be a comparable effort in the provision of technical services to the livestock industry. Because of the comparatively low technical standards in the livestock industry generally, the level of technical services to be provided will, if anything, need to be somewhat higher.

72. A larger and technically more efficient livestock industry will require proportionately greater amounts of purchased inputs, in particular feed. At present the livestock industry is using 14,000 tons of imported feed a year at an average landed cost of Rs 450 per ton. 5,000 tons of compound feed a year are produced, nearly all from imported raw materials, at the Government feed mill at Richelieu. This mill will be completely modernised and greatly expanded. It will be run on commercial lines in order to keep the cost of materials to be compounded to a minimum and, even more important, to produce compound feeds tailored to the specific requirements of the different sections of the livestock industry in Mauritius. It will greatly accelerate the development of the livestock industry in Mauritius if, initially, through external grants in the form of feed, the feed mill is able to sell compound feed at subsidised prices to small producers.

73. Another factor inhibiting the proper development of the livestock industry is the existence of the stable fly (Stomoxys). This fly occurs under all climatic conditions in Mauritius. It affects livestock—both wild and domesticated—in that it causes severe blood loss, annoyance to cattle, opens wounds for subsequent action by secondary myiasis flies, and causes opthalmia in bovines. Consequently, cattle has to be kept indoors for protection. In fact most of the cow population is kept in sheds in the backyard under extreme unhygienic conditions. The cattle is stall fed, which means that fodder has to be collected. Efforts will be made during the plan period to control the pest through biological and sterile-insect techniques.

E. Forestry and Fibre

74. The principal importance of forestry in Mauritius is in conserving and protecting the soil and, more particularly, the water resources of the Island. Apart from the nine national reserves of 4,000 arpents, 15,000 arpents of private land are protected mountain and river reserves. Legislation on river reserves has recently been consolidated and revised to make it more effective. Catchment areas totalling 10,000 arpents are being afforested where the existing cover does not already afford adequate protection.

75. Of the 80,000 arpents of Crown lands, 65,000 arpents comprise the Crown Forest Estate. Of this some 20,000 arpents have been demarcated for agricultural use, of which 13,000 arpents have been planted or earmarked for tea. The coastal belt of 250 French feet* comprises over 5,000 arpents of Crown land. 1,500 arpents of this have been leased for the erection of hotels and sea-side bungalows and 2,500 arpents as grazing land, in which case it is required to be planted with trees, usually casuarina by the lessee. The remaining 10,000 arpents of Crown lands are administered by the Ministry of Housing and Lands.

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*80 metres

76. A considerable replanting programme had been undertaken on the Crown Forest Estate in the sixties, mostly of Central American pines, Japanese cedar and, in the lower areas, Australian eucalyptus. From an average of 550 arpents a year, the rate of planting was increased to 1,260 arpents in 1968, but dropped to 960 arpents in 1969. Understandably the best soils and slopes were selected for planting, some 10,000 arpents of which have subsequently been replanted, or earmarked for replanting, with tea. The lack of a clear land use policy in the past has meant that the benefits of much of the investment undertaken have been dissipated.

77. At present over 20,000 arpents are in forest plantations, of which 16,000 arpents on Crown lands. Excluding mountains, a further 75,000 arpents of land outside urban and village areas are not under cultivation or in forest plantations. Some of this can be classified as forest land and most of the rest as scrub. Less than 25,000 arpents of this are on slopes of less than 13 per cent where cultivation is not precluded by extreme rockiness.

78. At present the Crown forests are yielding some 130,000 cubic feet of timber a year (mostly softwoods) and privately owned plantations perhaps another 30,000 cubic feet.† Imports of sawn timber are around 300,000 cubic feet a year, mostly from Malaysia. The main value of the state owned and private forest lands, apart from their considerable importance for the water regime of the Island, is in providing the needs of fuel wood and poles. About 65,000 cubic feet of poles are cut each year on the state owned plantations and a further 35,000 cubic feet on privately owned land. The yield of fuelwood from Crown lands is around 50,000 cordes a year*, and that from privately owned land perhaps a further 5,000 cords, equivalent to 2½ million cubic feet in all.

79. Valuing timber and poles at an average of one Rupee a cubic foot and fuel wood at Rs 5 a corde, the value of forest products obtained from Crown lands is roughly Rs 500,000 a year and from private lands Rs 100,000. The value of actual sales from Crown lands is half this amount. Including value added in sawmilling—which is high because of the low price at which standing timber is sold to contractors—and the value of handicrafts based on forestry products, the total output of forest produce is around Rs 1 million a year.

80. Pines are planted in Mauritius on a twenty five year cycle. Most of the return, Rs 6,000 per arpent, accrues at the end of the cycle, when the area is clearfelled for replanting. Over the entire cycle the value of output works out at an average of Rs 250 per arpent per year.

81. The preparation of a land capability map for the Island and the identification of the suitability of specific areas for particular agricultural, livestock and forestry enterprises will need to be much further advanced before a comprehensive land use plan can be prepared for

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†35 cubic feet = 1 cubic metre

*[illegible] corde is equivalent to approximately 50 cubic feet of roundwood

those parts of the Island where land is at present underutilised. Such a land use plan will also take into account the experimental work now being carried out by the FAO Milk and Meat Project on the development of pastures for intensive fodder production and on increasing production from the Javanese deer on the Island and the report of the Indian Techno-Economic Survey Mission, 1971.

82. The development of land at present under scrub for crop production, mixed farming, fish culture, pastures, forestry and fibre offers extensive scope for capitalising the present abundance of labour on the Island in order to create productive assets. An immediate start will, therefore, be made on land development in those areas where the most economic use to which the land should be put is most obvious. In tea, the areas to be planted in the first three year phase of the tea development project have already been marked out and the work of clearing and preparing the land for planting has been started; a preliminary selection has been made of the areas to be planted in the second phase of the project. This work will be carried out by the Tea Development Authority, which will distribute the land to smallholders when it is in bearing and recover its outlay through a cess on the leaf produced.

83. The development of land for other crop, livestock and forestry enterprises will be almost entirely undertaken with hand labour and will form part of the "Travail pour Tous" programme. 6,000 arpents of forest plantations will be established over the next four years and 1,500 arpents of aloe plantations, which will be interplanted between rows of eucalyptus. In addition fruit trees—in particular letchis, mango and guava—will be planted on certain mountain slopes, dry river banks and along roadsides, and on patches of waste land in the more heavily populated areas. Every effort will be made to have a tree cover on the slopes of the mountains around Port Louis. The programme for planting fruit and nut trees will include projects for the establishment of seedling nurseries to sell seedlings at low cost for planting by individuals.

84. In spite of the establishment of 8,500 arpents of new pine plantations in the 1960's, the area under pines over ten years old on Crown lands has, because of the diversion of forest plantations to other uses, actually declined in the last five years to less than 600 arpents. Very little fully grown timber will be available over the next four to ten years. Government revenues from the sale of timber, poles and fuelwood, which exceeded Rs 1 million a year in the fifties, have dropped to around Rs 300,000 a year. This is partly a matter of pricing policy as well as lower yields of timber suitable for sawmilling. Total government revenue from the sale of timber and other forest products has amounted to Rs 16 million over the last twenty years, as against a total expenditure of nearly Rs 50 million. To ensure that a properly planned planting programme is carried out on both Crown and privately owned land to meet the needs for soil and water conservation and protection and for poles and fuelwood as well as a part of the needs of

wood using industries, and to ensure that the forest resources of the Island are exploited for the maximum benefit to the economy, working plans will be prepared for both publicly owned and privately owned forest plantations.

85. The value of the forest lands, in terms of cash returns, is not only that of the timber and lumber cut and fodder collected for feeding cattle and goats. With the proper management of the forest lands and a more rational exploitation of the deer population, it is possible greatly to increase the value of the forest lands to the economy from the sale of venison, the export of trophies and skins and the development of stag hunting as part of the tourist industry.

(i) *Deer*

86. Deer (Cervus timoriensis tunjuc) were introduced from Java in 1639 and are well adapted to local conditions. The present population is around 20,000 head. Deer highly adapted to living in scrub lands and marginal forest lands make use of a wide range of various plants species and can thus be raised in areas not suitable for any other management. The Island could probably support a deer population of around 60,000 head. Experiments in wild life and pasture management techniques with the purpose of improving the present stock performance and potential in deer and to obtain a high average carcass weight have been started.

87. The output of venison for the local market alone could be increased to Rs 3½ million a year at producer prices from its present level of Rs 1 million. This would give a gross value of between Rs 50 and Rs 100 per arpent per year. Substantially higher prices can probably be obtained on export markets for venison (allowing for freight costs) while antlers and deerskins can probably be sold for export at a value per head equal to the local price of venison.

(ii) *Fibre*

88. The fibre plant Furcraea Gigantea (Mauritian hemp) grows wild on extensive areas of scrub lands. Exports ceased in 1957 and the fibre has been used locally in the manufacture of sacks, mostly for the sugar industry. Production was cut back to 1,300 metric tons a year in 1968 and 1969, enabling the Government sack factory to reduce its stocks to manageable levels. The present level of production to meet the requirements of the sack factory is 70,000 tons of leaf, which, at an into-mill price of Rs 15 a ton, gives a total value of Rs 1 million. Value added in producing is a further Rs 1 million.

89. In certain selected areas, forestry plantation will also be developed for fibre as well as for timber and lumber production. The economics of fibre production and those of the sack factory are closely interlinked. The prices at which Mauritius hemp could be sold on export markets do not, and are unlikely again, to cover the costs of cutting, transporting and processing the leaf. Up to 1968, the sugar industry was

the principal outlet for the products of the sack factory. The requirements of the industry for sugar sacks have been substantially reduced from 1970 and are likely virtually to disappear altogether over the next few years. The bulk of the output of the sack factory is now being exported to a wide range of countries and the products of the factory rank fourth, after sugar, molasses and tea, among the Island's exports.

90. There are good prospects that the factory will be able to expand its sales further and further diversify its production. There can, therefore, be expected to be a continuing demand for locally produced fibre, particularly as the cost of fibre production are being brought down through more efficient decortication. Costs of cutting and transporting leaf to the fibre mills will also need to be brought down through establishing aloe plantations near the decorticating plants on the West Coast. As the costs of establishing such plantations are almost wholly the labour input, there is here an opportunity for capitalising the present abundance of labour by establishing plantations on land which has no alternative use, thereby reducing cutting, collecting and transportation costs.

F. Nature Conservation

91. The indigenous forest species have largely been cut down or crowded out by exotics. There are, however, important stretches of largely indigenous forest left, notably in the spectacular Black River gorges. This area will be developed into a national park as recommended by Messrs. H.C. Pereira and V.P. Agarwala, both for its scientific and scenic interest. In collaboration with the French and British Governments work has been started on the flora of the Mascarene Islands (Réunion, Mauritius and Rodrigues).

92. The indigenous wild life is very much threatened in Mauritius itself and it is of utmost importance that it be protected. Some forms of reptiles and birds not found elsewhere continue to survive on one of the offshore islands—Round Island. Positive steps will need to be taken to keep down or eradicate the rabbits and goats that have been introduced on the island and to prevent depradations by men, if these species are to survive.

93. Some of the outer islands of Mauritius—the St. Brandon group—and some of the offshore islands of Rodrigues are teeming with sea birds. Certain of these islands will be preserved as bird sanctuaries.

94. Of the marine animals, sea turtles are particularly vulnerable and their exploitation is of only marginal benefit to the economy. They will, therefore, henceforth be protected in the outer islands.

95. The conservation of the indigenous flora and of the wild life of Mauritius and its outlying islands for the enjoyment of the people of

Mauritius and of visitors who come to enjoy and respect the scenic splendour and wild life of the islands of Mauritius and for scientific study does not require an expensive programme, but the work is vital in order to protect both the fauna and flora of Mauritius from extinction. It is rather a question of good management and of the co-operation of the people with the conservation policies of Government.

G. Fisheries

96. The landed value of the Mauritius fish catch plus the c.i.f. value of imported fish products is Rs 10½ million a year. Sales of iced and frozen fish in Mauritius and Reunion by the two companies operating on the St. Brandon Islands (Carajos) and the Nazareth Banks accounts for Rs 2 million; salt fish from St. Brandon for Rs ½ million; Rodriguans salt fish and dried octopodes for a further Rs ½ million; the wholesale value of the Mauritius lagoon fisheries is about Rs 2 million; and the c.i.f. value of imports, mostly South African canned pilchards, South African salted snoek and Indian bomblas, Rs 5½ million.

97. In terms of fresh weight the consumption of fish on the Island of Mauritius is 8,000 tons a year. The catch of the demersal fisheries on the Cargados Carajos shoals and the Nazareth Banks is 2,000 tons; the Rodrigues catch of fish, excluding local consumption, 300 tons, and of octopodes 350 tons; and that of the Mauritius shore based fisheries about 2,000 tons.

98. The Island of Mauritius rises steeply from the ocean bed of 2,000 to 4,000 metres. A depth of 200 metres is reached within 1½ km of the southern and western coasts and elsewhere within 2½ km of the fringing coral reef; only to the Northeast does a shelf extend up to 35 kilometres beyond the reef. The coastline is about 225 km. The area of lagoons within the coral reefs is 250 km^2 and the area between the reefs and a depth of twenty metres is 100 km^2. The productivity of the lagoon and adjacent fisheries is about 60 kg of fish per hectare. Average annual catches landed at controlled landing stations were 300 tons lower in the sixties than in the previous fifteen years.

99. Consumer expenditure surveys indicate that, if consumer income rises by two thirds over the next ten years, which would follow from the anticipated increase in employment alone, without allowing for any substantial increase in earning per person employed, the demand for fish could be expected to increase by 45 per cent. The consumption of fish on the Island of Mauritius could then be expected to reach 12,000 tons, in terms of fresh weight, by 1980. Allowing for imports of around 3,500 tons a year (in terms of fresh weight) and an increase in the supply of fish and octopodes from Rodrigues to 1,500 tons a year, a three-fold increase which would seem to be technically and economically feasible, the output of the Mauritius based fisheries for the domestic market would need to increase to 7,000 tons a year.

100. With regard to the lagoon fisheries, as Dr. M. P. Motwani of the Indian Techno-Economic Survey Mission has pointed out,* " it has to be emphasised that there is hardly any possibility of an increased catch by increasing the fishing effort, and, as Wheeler reported†, all that can be taken from the inshore waters is being taken ". The main increase in the white fish catch must therefore come from the deep-sea fisheries, which will need to increase by 2½ times to 5,000 tons a year by the end of the decade. This should not present any particular technical problem, nor should it present insuperable financial problems, if the industry is not forced to sell below cost and if there is a certain degree of rationalisation in production.

101. Apart from the demarsal fisheries supplying the Mauritius Market, Mauritius has, since 1964, been the main base for the pelagic fisheries (most tuna) in the Western Indian Ocean, which have been exploited by Japanese, Chinese (Taiwan), Malayan and South Korean vessels. An increase in the fishing effort in recent years has not resulted in increased catches, which have levelled off at around 30,000 tons a year. While tuna and other marketable pelagic fish would not appear to be particularly abundant in the Western Indian Ocean, there is scope for acquiring an increase in share of the existing fisheries, in view of the relative advantage of operating in the Western Indian Ocean from Mauritius instead of from ports in the Far East. One of the main factors determining the share of these fisheries which can be acquired by Mauritius is the level of skills and readiness of Mauritian fishermen to work in this industry.

102. Catching tuna is only marginally profitable; the profits to be made are rather in buying and selling and processing tuna. Here again Mauritius is acquiring a share in the economic gains to be made from the tuna fisheries in the Western Indian Ocean.

103. In the shore-based fisheries the main economic gains are to be made in a drastic reduction in the fishing effort. In 1953 there were 1,775 shore-based fishermen in Mauritius.‡ In 1970 the number of regular fishermen registered with the Ministry of Agriculture was 3,100, though there are many more who do not register themselves. The annual catch was probably a little over 2,000 tons, making an average of 650 kg. per regular fisherman. At an average producer price of Rs 1.35 per kg. average returns to labour for regular fishermen are about Rs 70 a month. The recorded catch at controlled landing stations was 1,220 tons a year in the sixties (omitting 1967, for which figures are incomplete), 25 per cent less than in the 1950's.

104. The lagoons have been subjected to much depredation over a long period. However, Government has already taken steps to tighten up control over inshore fishing and to strengthen the fisheries protection service of the Ministry of Agriculture. It is, therefore, expected that the catch from the lagoons will increase in the future.

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*" Techno-Economic Survey of Mauritius, Vol. III ", Government of India, February 1971.

†" Report on the Mauritius-Seychelles Fisheries Survey, 1948/49 ", H.M.S.O., London 1953.

‡Report of the Fisheries Advisory Committee, 1956.

105. Apart from reducing the fishing effort and thereby increasing the productivity per fisherman, the productivity of the lagoon fisheries per arpent can be increased by improving productivity in the present barachois and by extending marine fish farming through the creation of new barachois. Government owned barachois (artificially enclosed areas of the lagoons) cover 200 hectares. They are, on the whole, poorly managed at present and leases will not, as a rule, be renewed to the present lessees. Instead they will be leased to co-operatives of fishermen who will also be given technical and financial assistance to raise the productivity of the barachois to 500 kg. of fish per hectare per year, as compared with 60 kg. in the open lagoons. This will result in an increased output of 80 tons of fish by 1980. A further 1,000 hectares of barachois will be created under the " Travail pour Tous " programme by 1973, which will yield an additional 300 tons of fish by 1980. Marine parks will be created around existing and proposed tourist resorts and a marine aquarium will be built at Port Louis.

106. Oyster and crab culture are two other aspects of marine farming which will be developed.

107. Beyond the reefs, the shelf around Mauritius drops steeply, limiting the area available for demersal fisheries. There is some limited scope, however, for pelagic fisheries, notably bonito, around the 100 fathom line. It will also be Government policy to encourage the shark fisheries around Mauritius, and this for two reasons. One is to keep down the shark population around Mauritius, which is an important factor limiting the supply of marketable fish which can be caught in the waters around the Island, the other is to add to the supply of low cost protein foods. Although the bottom has dropped out of the shark liver oil market, properly processed shark meat is a nutritionally valuable and inexpensive food. It is expected that the catch can be increased from its present level of 45 tons a year, landed weight, to 150 tons by the end of the decade.

108. The freshwater fisheries on the Island, which are yielding very little at present, will further be developed to produce 300 tons of fish a year by the end of the decade. To carry out this programme, it will be necessary to eliminate the present population of various tilapia species, which is a comparatively simple process. The fish farm at Curepipe will be improved and a twenty acre fish farm established at Midlands to receive and propagate species of fresh water fish to be introduced, or reintroduced, from India and elsewhere; among others Catla catla, Labeo rohita, Cyprinus carpio (the common carp) and Tor putitora (mahaseer). The existing reservoirs and ponds will be stocked with the first three and the rivers with the last named of these species, resulting in an increase in production of 300 tons by the end of the decade. In addition, intensive culture of fresh water fish and prawns will be introduced in artificial fish ponds to be run on a co-operative basis.

109. Finally in order to help the fishermen increase the catch, they will be grouped into co-operatives and arrangements will be made for the provision of credit facilities from the Central Co-operative Bank for the acquisition of necessary tools and equipment.

H. Organization

110. The livestock sector of the economy is much more technically backward as far as small-scale enterprises are concerned. This is also true of fisheries within and around Mauritius and Rodrigues. The development of forestry and related enterprises will be largely in the public sector, or, where it remains in the private sector, will need considerable guidance and to some extent direction if the fullest use is to be made of the land resources of the Island. The services within the Ministry of Agriculture dealing with livestock, fisheries and forestry will require strengthening if the goals and objectives the Government has assigned to these sectors of the economy are to be achieved.

111. The Ministry of Agriculture will therefore, be reorganized on the lines proposed by the Food and Agriculture Organization of the United Nations and in which the work of the Ministry will be organized on a functional basis into departments. The Heads of Departments will report directly to the administrative head of the Ministry and will be responsible to him for the technical direction of their departments.

112. In the field of research in crop production, Mauritius already has, in the Sugar Industry Research Institute, one of the finest agricultural research institutes in the world. This is a public body in that it is financed out of public funds, that is to say the earnings of the Mauritius economy from the sale of its main crop. It exists to serve the interests of agriculture—in particular crop production—in Mauritius. Its work has been largely on sugar, this being the main crop, but, with the need to produce other crops in addition to sugarcane at a high level of technical efficiency, it has expanded its work onto other crops and will need to extend its work further on those crops which promise a sufficient agricultural economic potential to warrant further research. There is no room in Mauritius for more than one good agricultural research institute. All research in the field of agriculture in Mauritius will be integrated. A National Agricultural Research Institute will be established. It will be a semi-autonomous body directly controlled by the Ministry of Agriculture and Natural Resources. Apart from research in the field of crops the functions of the Institute will also include research on forestry, livestock and fisheries.

APPENDIX I

THE MARKET FOR FOOD, DRINK AND TOBACCO IN MAURITIUS

The market for food, drink and tobacco in Mauritius is Rs 230 million a year, of which Rs 90 million is local production (at producer or ex-factory prices, excluding excise duties), Rs 10 million is the processing margin in the further processing of imported produce and Rs 130 million is imported produce (at c.i.f. prices).

	Local production	*Imports*	*Total market*
	Rs. Million		
Food crops	45	97	142
of which :			
grains	3	65	68
Livestock products ...	21	22	43
Fish	4½	6	10½
Tobacco	10	1	11
Bottled drinks	16	5	21
TOTAL ...	97	131	228

FOOD CROPS

The consumption of the main staples—rice and wheat—amounts to 100,000 tons a year, of which two thirds is rice and one third is wheat flour. Rice and wheat flour account for half the total value of imported food, tobacco and drinks.

The consumption of rice is 80 kg a head per year—½lb. per person per day. The consumption of wheat flour is 45 kg a head per year.

Nearly all the rice consumed in Mauritius is imported by Government from Burma and Thailand. Prices climbed to Rs 900 per metric ton, c.i.f. Port Louis, in 1968, but have since dropped back to their previous levels of around Rs 600 a ton. Flour is imported by Government from France at prices around 60 per cent above those for Burmese and Thai and Australia at an average price of Rs 450 per metric ton.

Imports of Malagasy, American, Pakistan and Egyptian rice by traders at prices around 60 per cent above those for Burmese and Thai rice, have increased sharply in recent years to 5 per cent of the total supply. Local production of rice has got under way and reached 800 tons in 1969.

The consumption of potatoes and other starchy roots is 14 kg a year per head of the population. This makes a total of over 10,000 tons, of which three quarters is from local production. Prices at the producer or import level are around Rs. 550 a ton on average.

Mauritius consumes 35-40 kg of sugar a year per head of the population, making a total of 30,000 tons a year. This is high in relation to the level of consumer income. Prices, which are pegged to just under Rs. 300 a ton for unrefined sugar at the wholesale level, have, as it happens, been equivalent to the average export price on the lowest priced export market over the past five years. At an average intake of 400 calories a day per person from sugar, sugar consumption in Mauritius is also high in physiological terms.

The consumption of visible edible fats and oils is 13 kg per person per year. This is twice the Indian and one third of the United States level and is, in quantity and also composition, satisfactory from a physiological point of view. Of the total consumption, over 9,000 tons are liquid edible oils sold as such, selling at around Rs. 2 a kilo, bottled, ex factory. 1,250 tons are margarine and shortening, (in terms of fat content), selling at around Rs. 3 per kg wholesale and 275 tons are butter and ghee (in terms of butterfat). The average import price of butter is a little under Rs. 5 a kg.

Nearly all the edible oils consumed as such in Mauritius are imported in bulk and refined locally. Most of the margarine and shortening sold in Mauritius is produced locally from imported hydrogenated oils. There is no local commercial production of butter and ghee.

The production of vegetables (othre than potatoes and other starchy roots) is around 30,000 tons a year and accounts for 70 per cent of total consumption. Pulses account for the greater part of imports.

Other important food imports derived from crop production are fresh fruit, particularly citrus, tinned and preserved fruit, spices, cocoa products and coffee. Total imports of food crops other than grains and fats and oils are Rs. 15 million a year.

LIVESTOCK PRODUCTS

Domestic milk production was estimated at 20 million litres a year in the 1960's but has been declining. Imports of dried and condensed milk are equivalent to 25 million litres of fresh milk. Total consumption of milk is equivalent to around 50 litres per person per year. Producer prices are around 35 cents a litre. Imports are mostly Australian, New Zealand and British dried milk powder, Australian evaporated milk and South African and British milk preparations. Cheeses are mostly imported from Australia, the Netherlands and France.

The consumption of fresh and frozen meat, other than poultry, in Mauritius is 6,000 tons a year, carcass weight, 7½ kg. per head of the population. Of this 60 per cent is beef, a quarter mutton and goat meat and 10 per cent pork.

APPENDIX I—*continued*

Of the total consumption, 2,000 tons is from animals reared on the Island, worth Rs. 6 million at producer prices, and 400 tons is from animals, mostly pigs, shipped from Rodrigues, worth Rs 1 million at producer prices (including freight). 1,750 tons, in terms of carcass weight, is imported from Madagascar, mostly in the form of live cattle, amounting to Rs. 5 million a year. Australia supplies 1,500 tons a year, in terms of carcass weight of which two thirds is frozen mutton. Imports of Australian meat and live animals are worth Rs. 2¾ million a year. Imports of meat from Africa, mostly frozen beef, are 200 tons a year. In addition to live animals and frozen meat, Mauritius imports tinned and other processed meats to a value of Rs. 2 million a year.

Virtually the entire market for poultry meat and eggs in Mauritius is supplied by local production. The output of the poultry industry at producer prices is probably of the order of Rs. 10 million a year, of which Rs 2¼ million from commercial broiler production. The economic importance of the poultry industry to Mauritius is therefore about equal to the, at present, declining cattle industry. With poultry meat selling at 50 per cent more than beef, there would certainly appear to be scope for a further expansion of the industry.

Of the total market for livestock products of Rs. 45 million a year at producer or import prices, domestic production on Mauritius and Rodrigues accounts for one half. With an improvement in the economic situation on the Island, particularly if, as is planned, this results in better earnings for the poorer sections of the population, the demand for livestock products can be expected to increase more markedly than the demand for foods derived from crop production, and the demand for fresh milk, fresh meat and eggs can be expected to increase more than the demand for powdered milk and frozen meat. There would appear, therefore, to be at least as much, if not rather more scope for increasing livestock production in Mauritius than for increasing crop production for sale on the domestic market.

FISH

In terms of fresh weight, the consumption of fish in Mauritius is 8,000 tons a year or 10 kg per head. Sales of iced, frozen and salted fish by the demersal fisheries operating in the St. Brandon Islands (Cargados Carajos) and the Nazareth Banks are 1,900 tons (fresh weight) worth Rs 2½ million (landed price); sales of Rodrigues fish and octopodes in Mauritius are 600 tons (fresh weight), worth Rs ½ million; the catch of the Mauritius shore based fisheries is between 1,000 and 2,000 tons a year. Imports are 4,000 tons a year, in terms of fresh weight, mainly South African canned pilchards, South African salted snoek and Indian bomblas.

APPENDIX I—*continued*

Tobacco

Mauritians smoke two cigarettes per man, woman and child per day, on average, making a total of 600 tons a year. Of this 20 tons of cigarettes are imported and the balance produced locally. However, over 90 per cent of local production come from local leaf. Including excise and import duties and distribution margins, cigarettes probably account for 10 per cent of total consumer expenditure on food, drink and tobacco.

Drinks

Sales of bottled and canned drinks in Mauritius, at ex-factory or import prices (excluding excise and import duties) are Rs 25 million a year. One third of this—100,000 hectolitres—is carbonated or other bottled soft drinks, bottled water and canned or bottled fruit juices and two thirds is alcoholic drinks.

Sales of beer and stout are 45,000 hectolitres a year, of which three quarters is brewed locally. Imports are mainly Irish stout, carbonated and bottled in Mauritius, and Singapore beer.

Over 30,000 hectolitres of fermented beverages with an alcohol content of between 11 per cent and 14 per cent are produced in half a dozen factories in the Port Louis area. Imports of wine amount to 2,500 hl a year.

The consumption of spirits in Mauritius is 15,000 hectolitres a year (½ cl a day on average per head of the population). Of this 1,000 hectolitres are imported, nearly all from the United Kingdom, mostly Scotland. The local production of spirits is pure ethyl alcohol distilled from molasses and diluted with water.

In terms of alcohol, the consumption of alcoholic beverages in Mauritius is around 12,000 hectolitres a year (1½ litres per head), of which half from spirits, a third from wines and similar fermented drinks and one sixth from beer and stout. At the retail level, including indirect taxes, consumer expenditure on alcoholic beverages is properly a little under 20 per cent of total expenditure on food, drink and tobacco.

The Market for Food, Drink and Tobacco in Mauritius

AVERAGE 1965–1969

	Local Production	*Imports* *Rs. Million*	*Market Total*
Grains	3.1	64.9	68.0
of which :			
Rice	0.7	46.3	47.0
Wheat	2.4	16.5	18.9
Potatoes and other starchy root crops	4.4	1.7	6.1
Sugar and Sugar preparations ...	8.8	0.9	9.7
Fats and Oils	4.9	16.8	21.7
Vegetables	17.0	7.1	24.1
Fruits and Nuts	3.8	3.5	7.3
Tea, coffee, cocoa, spices etc. ...	3.0	2.5	5.5
FOOD CROPS	45.0	97.4	142.4
Milk and milk products ...	7.0	10.2	17.2
Meat	6.1	10.7	16.8
of which :			
Beef	3.7	5.4	9.1
Mutton and Goat	0.8	1.6	2.4
Pork	0.6	1.4	2.0
Venison and Other meat ...	1.0	0.6	1.6
Tinned meat and Extracts ..	—	1.7	1.7
Poultry and Eggs	8.0	1.0	9.0
LIVESTOCK PRODUCTS	21.1	21.9	43.0
Fish and fish preparation ...	4.5	6.0	10.5
TOTAL FOOD ...	70.6	125.3	195.9
Cigarettes & Other tobacco ...	10.3	1.1	11.4
Bottled & Canned soft drinks ...	7.0	0.8	7.8
Beer, Stout & Cider	3.8	1.9	5.7
Wines	2.7	1.0	3.7
Spirits	2.3	1.3	3.6
TOTAL DRINKS ...	15.8	5.0	20.8
TOTAL FOOD DRINK AND TOBACCO ...	96.7	131.4	228.1

NOTES :

1. Local production valued at ex-factory or producer prices, excluding excise duties. (Local sales of sugar valued at f.o.b. prices for sales to the lowest priced export market. Local sales of tea valued at average f.o.b. prices)
2. Imports valued at c.i.f. prices.
3. Local sales and imports are net of shipments to Rodrigues.
4. Rice – 1969 production valued at average c.i.f prices.

APPENDIX I—*continued*

5. For wheat products local production is value added in bakeries.

6. Local sales of sugar valued at f.o.b. prices to the lowest priced export market; excludes value added in refining

7. Edible oils—local production is ex-factory value of sales in 1969 less cost of imported unrefined oils (excluding duty in each case).

8. Margarine and shortening—local production is ex-factory value of sales in 1969 less cost of imported hydrogenated oils. Imports are 1969 imports of margarine, shortening and hydrogenated oils.

9. Fruits and nuts—local production does not include tree crops; imports include dried and preserved fruit.

10. Imports of butter and ghee shown under fats and oils.

11. Meat—local production includes estimate of illegal and unrecorded slaughter. Imports include live animals, of which Rs 1.0 million from Rodrigues. Imports of pork include bacon, ham and sausages (not in tins).

12. Imports of poultry include Rs 200,000 from Rodrigues.

13. Imports of fish and other marine foods include Rs. 400,000 from Rodrigues.

14. Local production of cigarettes is the estimated ex-factory sales value (excluding excise duties) less the cost of imported leaf.

15. Drinks—1967-1969 average.

APPENDIX II

THE MARKETS FOR MAURITIUS SUGAR CROP

Of the dozen leading sugar exporters with annual exports of more than half a million tons, it is Fiji, some of the Carribean Islands and Mauritius who are most heavily dependent on sugar exports—Mauritius rather more so than the Carribean.

Of the three main sugar exporters after Cuba, Australia is the leading wool exporter in the world, the Philippines the leading copra exporter and Brazil the leading coffee exporter. Sugar is nevertheless important for the economy of certain areas within these countries: Eastern Queensland, Central Luzon and the Northeastern coastal areas of Brazil, though in the case of Brazil four fifths of the crop is sold on the domestic market.

PRINCIPAL SUGAR EXPORTERS

Selling		*Annual exports*
more than half of	a fifth or less of	
their exports on the U.S. market		
	Cuba ...	... 5 million tons or more
Philippines Brazil	Australia	1–2 million tons
Dominican Republic Peru	Taiwan South Africa MAURITIUS West Indies* Poland	½–¾ million tons

2. World production of sugar is 70 million metric tons (raw value) a year, of which 15-20 million tons enter into world trade. The average level of production in Mauritius in the 1960's was 600,000 tons, product weight, equivalent to 650,000 tons raw value.*

The principal import markets for sugar are the United States, the United Kingdom, Japan and Canada.

IMPORT MARKETS FOR SUGAR
(1965–1969 AVERAGE IMPORTS)

	Million Metric Tons (raw value)
U.S.A.	4.3
U.K.	2.2
Japan	1.7
Canada	0.9
Other Asia	3.1
Africa	1.6
Other W. Europe ...	1.7

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*Jamaica, Guyana, Trinidad, Barbados, Antigua, St. Kitts-Nevis-Anguilla; combined exports 1 million tons.

*As a rough approximation deduct 5½% from raw value to convert to product weight.

APPENDIX II—*coutinued*

3. Cuba is the giant among exporters, followed by Australia, the Philippines, and Brazil. Countries exporting between $\frac{1}{2}$ million and $\frac{3}{4}$ million tons a year including (apart from Mauritius) Taiwan, South Africa, the Dominican Republic, Mexico, Poland and Peru. The combined exports of the West Indies† are a little over one million tons a year.

PRINCIPAL SUGAR EXPORTERS

(1965–1969 AVERAGE)

	Thousand Metric Tons (raw value)
Cuba	4,969
Australia	1.763
West Indies ‡ ...	1,117
Philippines	1.045
Brazil	993
Taiwan	687
E.E.C.	688
South Africa ...	672
Dominican Republic ...	606
Mauritius	604
Mexico	588
Poland	455
Peru	396

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†Commonwealth countries and associated states in the Carribean, excluding British Honduras and Bahamas.

‡Of which :

Jamaica ...	400	Barbados	175
Guyana ...	270	Antigua	45
Trinidad ...	185	St Kitts-Nevis-Anguilla ...	

4. World trade in sugar is regulated by six different sets of agreements among exporters and imports:

(i) EUROPEAN ECONOMIC COMMUNITY

Production and consumption during 1965-69 have been roughly in balance for the European Economic Community as a whole at 7 million tons, but output is going up.

SUGAR PRODUCTION AND CONSUMPTION
IN THE E. E. C.

(1965–1969 AVERAGE)

	Production	*Consumption*
	Million Metric Tons (raw value)	
France*	2.2	2.0
Belgium/Lux.	0.5	0.4
Netherlands*	0.7	0.8
Germany	1.9	2.3
Italy	1.4	1.5
	6.7	7.0
Candidates :		
United Kingdom	1.0	2.9
Ireland	0.1	0.2
Norway	—	0.2
Denmark	0.3	0.3
	1.4	3.6

Sugar is traded within the European Economic Community at not less than the intervention price of $ U.S. 190 per metric ton. The levy on imports from other sources is the difference between the intervention price and the lowest c.i.f. price on the world market at the time.

National quotas include deliveries of 350,000 tons from the French Overseas Departments (Reunion, Guadeloupe and Martinique). Under the Common Agriculture Policy quotas on sugar will be abolished after 31st December, 1974.

(ii) COMMONWEALTH SUGAR AGREEMENT

The United Kingdom consumes 3 million tons of sugar a year. Domestic production is 1 million tons. The Commonwealth Sugar Agreement covers 80 per cent of current imports and applies to the following 15 countries:

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*Excluding Overseas Departments

APPENDIX II—*continued*

NEGOTIATED PRICE QUOTAS ON THE U. K. MARKET UNDER THE C. S. A.

	Thousand Metric Tons tel quel	*Ratio 1965-69 average exports %*
West Indies*	737	68
Mauritius	386	64
Australia	340	21
Fiji	142	44
Swaziland	86	63
India	25	11
East Africa†	7	23
British Honduras	21	49
Southern Rhodesia (suspended) ...	—	—
	1,744	42

The agreement is of indefinite duration subject to termination at six years' notice as to its main provisions. The EEC Common Agricultural Policy does not, as it stands at present, provide for quotas for sugar, or other agricultural products, to continue beyond the end of 1974. If Britain becomes a member of the European Economic Community, the position of sales of Commonwealth sugar on the U.K. market after that date would need to be reconsidered by the parties to the Agreement in the light of such obligations as the United Kingdom may assume in being a member of the European Economic Community.

Prices are negotiated annually and are at present U.S. $ 103 per metric ton for Australia and a special payment for the less developed exporting territories varying inversely to the "world price". This is at present between U.S. $ 3½ and U.S. $9½ per metric ton.

(iii) THE U.S. MARKET

U.S. Sugar consumption is around 10 million metric tons. The 1970 quota for the domestic crop, including Hawaii and Puerto Rico, is 5.8 million metric tons. Import quotas cover virtually the entire exportable surpluses of the Philippines and Latin America other than Cuba. Quotas are due to be renegotiated in 1971.

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[*] Jamaica, Guyana, Trinidad and Tobago, Barbados, Antigua, St. Kitts-Nevis-Anguilla.

[†] Uganda, Kenya, Tanzania.

APPENDIX II—*continued*

U.S. DOMESTIC AND IMPORT QUOTAS
(AUGUST 1970)

	Thousand metric tons	*Ratio to 1965-1969 average total exports* %
U.S.A. Mainland	4,454	
Hawaii	1,040	
Puerto Rico	327	
Total Domestic	5,821	—
Philippines	1,181	113
Dominican Republic	616	101
Mexico	593	101
Brazil	579	58
Peru	414	105
Other Latin America*	556	74
Latin America	2,757	83
West Indies†	197	18
British Honduras	14	29
Bahamas‡	9	67
French West Indies§	62	30
Commonwealth, British and French Caribbean	282	21
Australia	187	11
India	75	32
Fiji	41	13
MAURITIUS	17	3
Swaziland	7	5
Commonwealth Exporters Excl. West Indies	327	11
Taiwan	78	11
South Africa	55	9
Others¶	31	21
TOTAL IMPORTS	4,711	46

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* Excluding Cuba

† As in previous Table

‡ Exports have been recorded for the first time in 1969

§ Guadeloupe and Martinique

¶ Thailand, Malagasy Republic and Ireland

APPENDIX II—*continued*

Mauritian sugar is sold on the U.S. market under contract No. 10, the price for which is currently $ U.S. 140 per short ton c.i.f., which works out at approximately $ 145 metric ton f.o.b. Port Louis.

(iv) THE AFRO-MALAGASY AGREEMENT

This is an agreement between the sugar importers among the Yaounde countries and the exporters to buy Malagasy and Congo Brazza sugar at negotiated prices.

SUGAR PRODUCTION AND COSUMPTION IN THE YAOUNDE COUNTRIES (1965–1969 AVERAGE)

	Production	*Consumption*
	Thousand Metric Tons (raw value)	
Exporters:		
Malagasy Republic	104	39
Congo Brazza	75	5
	179	44
Importers:		
Cameroon	—	13
Central African Repulic ...	—	4
Chad	—	19
Congo Kinshasa	38	41
Dahomey	—	8
Gabon	—	2
Ivory Coast	—	38
Mali	—	25
Mauritania	—	25
Niger	—	7
Senegal	—	64
Somalia	33	34
Togo	—	9
Upper Volta	—	11
	250	344

(v) THE INTERNATIONAL SUGAR AGREEMENT

Most of the major sugar exporting countries are parties to the International Sugar Agreement, with the exception of the European Economic Community.

At a prevailing price below 4 cents (U.S.) per lb f.o.b. ($ 88 per metric ton) basic export tonnages are 7.4 million tons raw value, apart from sales made on the U.S. market, sales on the U.K. market under the Commonwealth Sugar Agreement, sales by Cuba to Communist countries, sales of up to 1¼ million tons by the USSR and sales among themselves by the Yaounde countries.

At a prevailing price above $ 115 per metric ton export quotas are inoperative and there is an obligation on the part of exporters to supply minimum quantities to importing members.

On the importing side, the Agreement covers (August 1970) an import market of 4 million tons—about a quarter of the world import market and 45 per cent of what is known as the " free market ". The signatories to the Agreement include the three main importers other than the United States—the United Kingdom (for that part of its import market not supplied under the Commonwealth Sugar Agreement), Japan and Canada. (The United States does not buy sugar outside its fixed price quota arrangements).

The importing countries have assumed an obligation not to buy more sugar from non-members than they did in 1966-68 and none at all should prices fall below 3.35 cents (U.S.) per lb ($74 per metric ton).

INTERNATIONAL SUGAR AGREEMENT—BASIC QUOTAS IN EFFECT, 4th JANUARY 1971

	Thousand Metric Tons (raw value)	*Ratio to 1965-69 average exports* %
Cuba	2,150	43
Australia ...	1,100	66
Taiwan	630	92
South Africa ...	625	98
Brazil	500	50
Poland	370	86
Czechoslovakia ...	270	153
India	250	107
West Indies ...	200	18
Dominican Rep ...	186	31
Mauritius ...	175	29
Colombia ...	164	99
Fiji	155	48
Peru	100	25
Mexico	96	16
Argentina ...	55	74
Swaziland ...	55	40
Hungary ...	51	121
Congo-Brazza ...	41	60
Malagasy Republic ..	41	62
Denmark ...	41	77
Uganda ...	39	134
Thailand ...	36	105
British Honduras ...	22	45
Guatemala ...	11	21
Honduras ...	11	170
Bolivia	10	116
TOTAL ...	7,384	52

Exports by non-members are 1½ million tons a year.

(vi) CUBAN SALES TO COMMUNIST COUNTRIES

Production and consumption of sugar in the Soviet Union and Eastern Europe are 15 million tons a year. Poland, Czechoslovakia and Hungary are exporters with an aggregate quota under the International Sugar Agreement of 700,000 tons.

Mainland China and other Communist countries in the Far East are, at present, net importers of sugar of 400,000 tons a year.

Over the period 1965-1969, Cuban exports averaged 5 million metric tons p.a. The main markets for Cuban sugar were in order the USSR (2 million tons p.a.), Eastern Europe (780,000 tons p.a.) and Mainland China, North Vietnam and North Korea (608,000 tons p.a.).

5. Mauritius sells two thirds of its sugar crop (386,000 metric tons, tel quel) in the United Kingdom under the Commonwealth Sugar Agreement. The present quota on the U.S. is 17,000 metric tons—2½ per cent of the crop. The balance of export sales, that is to say sales within the International Sugar Agreement, are a quarter of an average crop. The major part of this is at present sold to Canada, where there is an effective preference for sugar imported from the signatories to the Ottawa Agreement of 1932 of over $ Can. 20 a ton (Rs 100). Under the Commonwealth Sugar Agreement exporters have undertaken to give priority to sales to Canada in such quantities as may be required.

Local sales are 5 per cent of the crop.

APPENDIX II—*continued*

PRODUCTION, CONSUMPTION AND TRADE IN SUGAR (1965–1969 AVERAGE)

Raw Value

	Production	*Exports*	*Imports*	*Consumption*
	Million Metric Tons			
U.S.A	5.6	—	4.2	9.8
E.E.C.	7.2	0.7	0.4	6.7
U.K.	1.0	0.3	2.2	2.9
Ireland, Norway, Denmark ...	0.4	0.1	0.3	0.6
"The Ten"	8.6	1.1	2.9	10.2
Japan	0.6	—	1.7	2.3
Canada	0.1	—	0.9	1.0
Other I.S.A. importers* ...	1.5	0.2	0.9	2.2
I.S.A. importers excl. British Isles*	2.2	0.2	3.5	5.5
Yaounde countries ...	0.3	0.1	0.2	0.3
Other non-Communist non-exporters ...	2.8	0.2	3.8	6.4
	3.1	0.3	4.0	6.7
U.S.S.R. & E. Europe ...	14.3	2.5	3.1	14.3
Mainland China, N. Korea and N. Vietnam	2.5	0.3	0.7	2.8
Cuba	5.6	4.9	—	0.6
Other Latin America ...	10.3	2.6	0.2	7.5
Philipines	1.6	1.0	—	0.6
Australia	2.4	1.7	—	0.7
Mauritius	0.7	0.6	—	—
West Indies	1.3	1.1	—	0.2
Fiji	0.3	0.3	—	—
Swaziland	0.2	0.1	—	—
India	3.2	0.3	—	2.8
East Africa	0.3	—	0.1	0.3
C'Wealth Exporters ...	8.4	4.1	0.1	4.0
Taiwan	0.9	0.7	—	0.2
South Africa	1.5	0.7	—	0.8
Exporters excluding Europe & French Overseas departments ...	28.3	14.0	0.3	13.7

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*Excluding U.S.S.R.

CHAPTER XI

COOPERATIVE DEVELOPMENT

A. General

In order to encourage the establishment of cooperatives and the development of the cooperative movement, Government created a separate Ministry in 1970. The Ministry of Cooperatives and Cooperative Development is responsible for inculcating the cooperative spirit, training in cooperative principles and practices, helping the cooperative movement to grow and keeping control on the development of cooperatives.

2. It is Government policy to build up a Cooperative Sector as a part of the scheme for planned development. The fields which are especially appropriate for the cooperative method of organization are small holder agricultural cooperatives, small-holder mixed farming, marketing and processing, cooperative of fishermen, artisans, labourers, craftsmen, construction cooperatives, small scale industries, consumers societies. In these fields, it is the objective of Government policy to enable cooperation to increasingly become the principal basis for the organization of economic activity.

B. Cooperative Development

3. Both in crop and livestock production, most of the increase in output envisaged over the next decade is expected to come from comparatively small scale enterprises. In crop production, this is not so much a question of creating new government services to assist the small scale agricultural producer or strengthening existing government services, as of making full use of the technical expertise, the organizational ability, the institutions and facilities which already exist in the sector, on the large estates, in the research institute, in commerce and in the co-operative movement. To be effective, all the means required to increase production on the smaller holdings must be available at the same time: the investment in land improvement and irrigation, the recurrent physical inputs, the organization of transport, the credit to finance these inputs, and technical advice

4. All producers on the Island are already grouped into factory areas. The estates which own the 21 sugar mills have considerable organizational capacity and experienced technical staff at their disposal

They have a very clear interest in making their technical and organizational capacity available to smaller producers in their factory area, since the profitability of their own operations depend in large part on how much cane they have to mill, whether this is grown on their own estates or bought in from outgrowers. What is required, therefore, is devising ways of extending technical know-how and management capacity already available within each factory area to the smaller producers in that area and of sharing the costs of these services between those who will benefit from it, that is to say the outgrower and the miller. Most of the agricultural holdings of less than 100 acres are of only one or two acres, where access to technical know-how and the services offered in the commercial sector is so costly in relation to the potential gains to be made in increased output that it simply is not worthwhile. The availability of the requisite assistance can, however, become easier if the small producers are grouped into co-operatives.

5. To enable the smaller producers—who account for a substantial chunk of crop production and who will need to account for the major increase in crop production over the next ten years—to use the technical and commercial facilities and the management capacity which are already available in the agricultural sector in Mauritius, they will need to group themselves in flexible ways to take advantage of the services offered according to their own changing needs and circumstances. Here the co-operative movement will have a major role to play.

6. The cooperative movement in Mauritius has a long and, in the agricultural sector, successful history. The basis for a cooperative movement, which will be the main instrument in enabling the smaller agricultural producers to take advantage of the facilities and expertise available in Mauritius to achieve higher levels of output and incomes, has been laid over the past fifty years. Government has, as in the case of other economic associations, regulatory functions. The main effort of Government in developing the cooperatives in the agricultural sector will, therefore, be directed to assisting the cooperatives to organise themselves more effectively to perform the role they will need to perform on behalf of their members in the changing economic circumstances of Mauritius, and to support them financially to fill in some of the initially more expensive gaps in devising a complete package of inputs, credit and assistance to enable their members to increase their output and incomes.

7. Apart from devising the means to enable smaller producers to avail themselves of physical, commercial and technical production aids, a major role of the cooperative movement is to improve the bargaining position of the smaller producers vis-à-vis suppliers, customers, such as sugar millers, wholesalers and butchers, and, indeed, Government.

8. The role of Government will be much more regulatory and administrative, while assisting the smaller producers, mainly through the cooperative movement, that is to say the organizations fashioned by the agicul-

tural producers themselves and responsible to them, to take advantage of the services which already exist in Mauritius and will be further strengthened to enable them to increase their incomes and their contribution to the development of the economy.

9. In order to take full advantage of the available facilities, cooperatives must coordinate the provision of physical inputs, credit and technical advice. In this the cooperative movement will be assisted technically, organizationally and financially to carry out this task.

10. The livestock sector of the economy is much more technically backward as far as small-scale enterprises are concerned. This is also true of fisheries within and around Mauritius and Rodrigues. The Plan envisages an increase in livestock production through a shift from a part-time occupation to a full-time occupation with a productivity of labour comparable with that of other labour intensive sectors of the economy. The establishment of such a full-time occupation will have to be mostly in small-scale enterprises which are to be organised on a cooperative basis in order to be technically and economically feasible. Government will encourage the establishment of such cooperative societies. These will be diversified livestock enterprises so that best use is made of capital, animal feed and available labour skills. In certain areas, livestock production will be combined with the production of vegetables, root crops, fish farming and forestry on a cooperative basis. These cooperatives will be supplied with animal feed from the Government Feed Mill to be established during the first year of the Plan.

11. The Ministry of Cooperatives and Cooperative Development has already started one youth training farm and two more are to be established during the Plan Period. Young people are trained on these farms on the techniques of mixed farming. It is planned to settle the trainees, after successful completion of their training, on small holdings to be run on cooperative lines. Crown Land will be made available for the establishment of such cooperatives.

12. One of the reasons for a poor catch by the fishermen is the lack of necessary tools and equipment. As it is beyond the means of the individual fisherman to equip himself for better sea fishing, it is intended to group fishermen into cooperative societies so that technical and credit assistance can be provided to them. Such societies would also establish their own marketing channels.

13. The establishment of a strong Cooperative in Rodrigues which will sell all Rodrigues' produce in Mauritius has been emphasized in the chapter on Rodrigues.

14. Chapter VIII, on Education, emphasizes technical and vocational training. While some of the trainees will find job opportunities in

different sectors of the economy, it will be important to create opportunities for those who either do not find jobs or are interested in establishing small-craft enterprises of their own. The lack of basic funds to start an enterprise may however cause problems. Government will therefore encourage such skilled people to group themselves into cooperatives so that they can have access to cooperative credit.

15. Government will also encourage the establishment of other production and marketing cooperative societies, depending upon the development of the movement in general.

C. Cooperative Credit

16. There are already 200 cooperative credit and marketing societies in Mauritius and Rodrigues with a total of some 12,500 members. The combined turnover of the primary societies is over Rs 40 million.

17. The societies are financed through the Cooperative Central Bank, which has been functioning since 1949. In February 1970, the total liabilities of the Bank amounted to Rs 13½ million. Only Rs 4 million of this consisted of long term loans, reserves and share capital. Savings deposits amounted to Rs 7½ million and demand deposits to Rs 2 million.

18. Advances by the Cooperative Central Bank are mostly crop loans. Rs 7 million are lent each season through the societies to some 2,000 cultivators. The Bank also supplements, interest free, the interim payments on the sugar crop made by the Mauritius Sugar Syndicate throughout the season. This enables the member societies to make a uniform sugar payment and so allows them to repay their loans earlier, thus benefiting from a reduction in the cost of borrowing.

19. The Cooperative Central Bank also makes medium term loans, mostly for the repayment of mortgages on agricultural land, for periods up to ten years. 800 loans for a total of Rs 2½ million were outstanding in February 1970. Housing loans outstanding amounted to Rs 1¾ million.

20. With the encouragement that is to be given to the cooperative movement, the need for credit for cooperatives will increase considerably. Government will therefore strengthen the Cooperative Central Bank, both organizationally and financially, in order to enable it to play an important role in financing commercially and economically viable projects of all types of cooperative societies. This will enable the Cooperative Central Bank to extend its coverage. There will be need to cover the risk involved in extending extensive credit to the cooperative societies. Government, therefore, is actively considering the possibility of insuring such risks. For working out such a plan, expert advice under technical assistance will be sought.

D. Management

21. Efficient management is vital to the success of any programme. The emphasis on cooperative development will require competent trained staff in key positions in cooperative institutions, in banking as well as in other cooperative societies. A programme of cooperative training and education will therefore be necessary. Government will organize programmes, seminars and short-courses, linked with the co-operative activities envisaged and undertake study and research directed towards the needs of developing a strong cooperative movement in the country. Programmes for training will cater for personnel required in the cooperative movement at all levels, junior, intermediate and managerial.

22. In developing an efficient cooperative movement, it is also essential to stress the role of well-informed and enlightened membership in the promotion and working of cooperative societies. Government, therefore, will also organize activities essentially directed towards the education of office-bearers and members of co-operative societies.

CHAPTER XII

MINING

The first detailed geological survey of the Island was carried out in 1949 by Simpson who concluded that:

> " Mauritius, in common with most islands of volcanic origin, is extremely poor in economic mineral deposits. While some ore minerals of potential economic value are undoubtedly present in the rocks, they are widely disseminated and the conditions controlling their crystalisation and solidification did not favour the concentration of such minerals into secondary products."

Detailed petrological and petrographic studies carried out by Walker and Nicolaysen supported the above conclusions. Simpson considered that:

(a) the clays found on the weathered parts of the trachyte intrusions could be utilised for the manufacture of baked bricks, while the highly plastic clays surrounding Montagne La Selle could support a fire brick industry;

(b) the available reserves of coral sand, clay and trachyte could be utilised for producing cement;

(c) a considerable scope existed for tapping groundwater from the Young Volcanic rocks.

2. The clay deposits were studied in greater detail by Wright (1967) and Burkhardt (1970). Burkhardt considered that there was a possibility of setting up a ceramics factory with a capacity of 50 tons a day in the north of the Island with the main objective of producing hollow bricks, curved bricks and pavement slabs. No ceramics industry other than a brick kiln could be set up in Mauritius because of the lack of raw materials.

3. Detailed studies of the possibilities of cement manufacture were carried out by Williams (1953), Wright (1957) and Janezic (1970). This possibility was also studied by the Indian Techno-Economic Survey mission in October—December 1970. Coral sand (calcium carbonate) would be the main material used in cement manufacture. It would need to be established that trachyte tuff can be mined economically for use in cement manufacture; otherwise the clay and silica components would need to be imported.

4. The main indigenous minerals used in Mauritius at present are basalt, for road metal, for the manufacture of cement blocks, and to some extent as building stone and for tombstones, and coral sand, for the manufacture of cement blocks, in the manufacture of lime, and as a top-dressing in cane fields, to replace the calcium leached out by weathering.

5. In 1967/68 there were 27 establishments manufacturing concrete or stone products, employing 500 workers, with a gross output of Rs 9 million. Cement blocks for the building industry are made from basalt chips and dust, coral sand and cement, usually in the proportions 64: 24: 12. The largest concern in the industry is United Basalts, with seven units, at five of which basalts are crushed to various sizes. One of the units is producing cement pipes; the firm has recently started the manufacture of reinforced pipes.

6. There were 13 establishments producing lime in 1967/68, employing 160 workers, with a gross output of Rs 1 million. Annual production is 6,000 tons, 80 per cent of which is used in sugar refining, 500—1,000 tons in agriculture and the rest in water purification and other minor uses. Two thirds of the output is produced at Mahebourg in a modern, vertical, mixed feed shaft kiln fired in a continuous operation using anthracite.

7. Coral sand (calcium carbonate) is a basic raw material for a large number of potential industries, as is indicated in the chapter on manufacturing. As this is the only mineral raw material of major economic importance available in abundance, a special study will be undertaken of potential industries based on this raw material.

8. In April 1970 Parliament enacted a law, vesting in the Crown the property in petroleum and making provisions with respect to the prospecting and mining for petroleum. Subsequently a prospecting licence was granted to Texaco Mauritius Ltd. covering offshore areas.

CHAPTER XIII

MANUFACTURING AND RELATED ACTIVITIES

A. Introduction

Planning for industrial development means the setting up of objectives, which are deemed consistent both with the solving of pressing national problems, and with the essential function of private entrepreneurs to establish and operate reasonably profitable ventures. The internal consistency of the industrial programme, on which its success depends, does not leave room for any action in the public or private sectors, which are out of line with its objectives. While Government is responsible for creating conditions conducive to the achievement of the programme, all sections of the community have an obligation to ensure that their policies, attitudes and actions are consistent with the national objectives. This does not mean that the programme is rigid and does not permit any flexibility. In fact, flexibility is an essential ingredient of successful planning. But flexibility can be meaningful only in the context of accepted national objectives. With experience gained, policies can be reviewed and changed. But *ad hoc* exceptions can have a negative influence on the overall programme.

2. It is the overall objective of the Government policy to stimulate industrial development according to the prospects and orientation defined in this chapter, with emphasis on manufacturing or other activities connected with large scale foreign trade operations. Government will offer substantial active co-operation in the form of financial and fiscal incentives and concessions, apart from creating infrastructure and other services. It would therefore be essential for the government to define the conditions for extending this co-operation in any project.

B. Present Manufacturing for the Local Market

3. In the early 1960's Government introduced a series of incentives and concessions designed mainly to encourage entrepreneurs to establish import replacement industries. These benefits include: protective import duties for infant industries; suspension of import duties on materials and equipment identifiable as being exclusively for industrial use and not locally available; rebates of import duties on other raw materials and components for specified industries; customs' drawbacks of import duties

on materials and components subsequently re-exported in finished products; import quota protection of up to 80 per cent of the market; initial depreciation allowance of 40 per cent on plant and 20 per cent on industrial buildings; tax holiday of 5 years if the benefit of initial depreciation allowance is utilized and 8 years with normal depreciation allowances; exemption from income tax on dividends; long term loans at favourable rates from the Development Bank for up to 50 per cent of long term capital employed; lease of standard factory buildings at subsidized rates; and free repatriation facilities.

4. This very substantial range of concessions and incentives has stimulated the development of import substitution industries during the 1960's. Between 1964 and 1968, the following increases occurred in establishments employing more than 10 persons (excluding sugar factories and electricity):

	1964	*1968*
Establishments (number)	168	189
Employment (number)	7,000	9,000
Gross output (Rs million)	105	133
Net output (at market cost) Rs million ...	41	53

5. The bulk of the increase in terms of gross output and of employment occurred in the following sectors:

	Increase	
	Gross output Rs million	*Employment number*
Food Manufacturing	5.5	230
Manufacture of Textiles	2.0	200
Chemical products (including soap, paints)	6.3	100
Transport equipment (including repairs of motor vehicles)	5.8	394
	19.7	924

6. A substantial portion of this increase was not, however, a direct result of the incentives quoted. Almost the whole increase in the Food Manufacturing sector was attributable to the development of the production and processing of tea. Similarly, the Government Sack Factory accounted for most of the increase in the manufacture of textiles. In the transport equipment sector, no establishment operated under a Development Certificate, and a part of the increase occurred in the value of repairs of transport equipment. As such, only about 50-60 per cent of the total increase between 1964 and 1968 in gross output of Rs 28 million and employment of 2,000 can be considered to be related to the incentives.

7. In 1967/68, there were 3,660 industrial establishments (excluding electricity and sugar factories) out of which 189 employed 10 or more workers, and accounted for 85 per cent of the total production in terms of net output. Among these establishments, one employed more than

400; one between 350-399; one between 250-299; four between 150-199; and twelve between 100-149. Of the 3,471 small establishments, with a total net output of about Rs 10 million, 3,106 establishments employed less than 5 each.

8. Industrial development that has taken place after the last Industrial Census is almost exclusively accounted for by establishments granted concessions by the government. By the end of 1970 government had issued licences (Development Certificates) to 110 industries, out of which 70 have gone into production. The majority of the Development Certificates were issued during the last three years: 1968-12; 1969-29; 1970-21. Among the industries established are (not including industries established recently under the Export Processing Zone System): beer; ale; stout; gin; jam; pickles; spaghetti; vermicelli; margarine; vegetable oil; dehydration of vegetables; paints and varnishes; carbon dioxide; cement bulk handling and bagging; concrete products; nails; oxygen; acetylene; floor tiles; shutters; candles; garments; metal furniture; spring mattresses; mirrors; soap; cosmetics; razor blades; rubber gloves; polishes; fibre glass; reinforced plastic products; metal springs; wood working; packaging materials of paper; paper board and foam plastic; diamond cutting and polishing; saw milling; metal doors and windows; metallic structures; wire fencing; wire products; rolled steel products.

9. Two important new industries, which will replace substantial imports are under construction: a plant for the manufacture of 100,000 tons product weight p.a. of chemical fertilizers, and a particle board plant with a capacity of 5,000 tons p.a., using bagasse as the basic raw material. In order to achieve full capacity utilization, both plants will have to export considerable quantities.

10. The manufacturing industry of the Island is established and operated entirely by the private sector. The only exceptions are the Government Sack Factory, producing about 1,800 tons p.a. of sacks, yarns, sacking, filter cloth and cordage products, and a livestock feed mill with a capacity of 5,000 tons a year.

11. The limited scope of the local market has resulted in a generally low utilization rate of plant and equipment. Very few of the new industries are able to achieve full utilization, even on a one shift basis. The majority of the major plants have utilization rates of 60 to 75 per cent, calculated on a one shift basis. Several plants are able to utilize much less of their capacity. The fact that even the smallest viable manufacturing units have capacities exceeding local demand, resulting in uneconomic rates of utilization, has not led to any significant supplementary export sales, as these units do not offer the economies of scale necessary to compete on the export markets.

12. Value added in most cases is fairly low, due to the lack of local materials and components. On average, value added ranges between 30 to 40 per cent of ex-factory price. In some particularly labour intensive industries, the added value is somewhat higher, for instance furniture and fixtures (45-50 per cent).

13. The lack of locally produced materials and components has resulted in comparatively heavy demands for working capital. On average, working capital requirements almost equal the average fixed capital investment.

14. Fixed capital investment has varied between the extremes of Rs 80,000 (one plant only) to Rs 2,000 per employee. The most capital intensive plants are, as is to be expected, in the food and drinks and chemical industries. The most labour intensive plants are in the clothing and metal working industries. The overall average fixed capital investment, excluding the two highest and the two lowest values, is about Rs 12,000 (including industrial buildings).

15. The backward linkage effect has on the whole been modest and has been significant, apart from the processing of agricultural produce, only in the footwear industry.

16. Although the cost of establishing and operating new import replacement industries has been high, the combination of concessions and protective duties and quotas have in general been sufficient to put the new industries on their feet. These developments have been of considerable advantage to the economy in initiating and providing a basis for industrial development. It has, however, also led to a certain erosion of revenue yield from import duties, without immediate compensation in the form of direct taxation and has not resulted in any general reduction of the overall costs to the consumer.

17. On the whole, the contribution of industry to employment creation between 1964 and 1970 must be described as modest, although its growth in terms of output was quite satisfactory in relation to the size of the local market. (See Appendix IV):

All Establishments except sugar factories and electricity	*1964*	*Increase*	*Estimate 1970*
Employment	11,260	6,800	18,060
Gross Output ; million Rs ...	126	74	200

18. Of the total increase in employment between 1964 and 1970, footwear, clothing and transport equipment together accounted for 56 per cent, while their share of the increase in gross output was 21 per cent. Food processing and chemical products together accounted for 7 per cent of the total increase in employment, while their share of the total increase in gross output amounted to 50 per cent. This emphasis on capital intensive industries, strengthened by the actual establishment of a chemical fertilizer plant, has limited the contribution of recent industrial development to overall employment creation.

19. Mining and quarrying, the manufacture of wood products and the manufacture of non-metallic mineral products registered a decrease in gross output and employment during the period 1964-1970, due to a slump in the construction industry.

20. Local industry supplied by the end of 1970 about 40 per cent of the total annual consumption of manufactures and about 50 per cent of the capital goods sectors—non-electric machinery and transport equipment—which is a unique feature for a developing country. The demand for beverages, tobacco, footwear, furniture and fixtures was met predominantly by local manufacturing, while the demand for textile yarn, thread and fabrics, paper and paper products, chemical products, petroleum products, basic metal manufactures and electrical machinery and apparatus was predominantly met by imports.

21. More than one half of the total increase in gross output between 1964 and 1970 was accounted for by food processing—excluding sugar factories—(processing of tea for export; margarine; refined vegetable oil) together with chemical products. These sectors together with footwear, clothing and transport equipment accounted for nearly three-fourths of the increase.

C. Prospects of Additional Manufacturing for the Local Market

22. The limitations experienced so far in the establishment of import substitution industries are relevant in considering the prospects for the future. Studies made in this regard indicate that the scope for further establishment of import substitution industry is rather limited. Some potential, however, exists for chemical fertilizers and particle board, for which plants are already under construction. Cement and allied industries, wheat flour milling and possibly dairy production also offer scope. Even for these principal commodities, the existing and anticipated size of the local market justifies only the establishment of very small production units. Some of these will necessitate exports of a part of the production. Industries which present development prospects, in many cases on a small scale basis, are graded as follows (not including export oriented industires). See Appendices Va to Vd.

(a) *Production facilities, existing and under construction, having sufficient capacity to cover present and future demand*

Electric batteries and bulbs
Paints, varnishes
Sewing thread
Knitted fabrics
Capsules for bottles and crown corks
Storage batteries and accumulators
Sugar confectionery
Margarine
Non-alcoholic carbonated beverages

Refined vegetable oil
Footwear
Mirrors
Soap and toilet preparations
Razor blades
Chemical fertilizers
Particle board

While some of these industries have a significant under-utilized capacity, there exists an additional local market potential for their products.

(b) Production facilities exist but are insufficient to cover all of present and future demand. Extension and/or diversification may be feasible

Meat preparations
Cereal preparations other than wheat flour
Alcoholic beverages
Clothing
Furniture and fixtures
Boxes and crates of wood
Paper conversion:
  published material, stationery, paper bags, commercial propaganda material, registers and ledgers
Floor covering and tapestries (aloe fibre carpets etc.)
Jewellery
Plastic articles
Animal feed
Leather
Joists, girders, angles of steel
Metal doors and windows
Nails, bolts, washers, rivets, screws of iron and steel
Hardware (builders' padlocks, fittings etc.)
Steam generating boilers, boiler house plant and parts
Bodies and other parts for road motor vehicles
Trailers of iron and steel
Cement pipes
Asbestos cement products
Pharmaceuticals (final processing and packing)

(c) Commodities for which the market potential may be sufficient to justify establishment of production facilities

Dairy products
Fish preparations
Wheat flour
Chocolate and chocolate preparations

Preparations of vegetables and fruits
Made up articles of textiles (blankets, bed linen etc.)
Travel goods, sports' goods, toys and games
Electro-domestic appliances (assembly)
Household utensils and other household articles of metal
Weed killing preparations (final processing and packing)
Insecticides and pesticides (final processing and packing)
Cement
Clay construction materials
Hand tools
Metal cans and containers
Sinks, wash basins and fittings
Lighting fixtures
Electrical accessories
Agricultural machinery and implements
Yeast for animal feed preparation
Welded steel tubes
Pumps for liquids

Although the need to maximize employment creation in industry alone may justify the establishment of some of these industries, it will be essential to test strictly every project proposal as to commercial and economic feasibility and consistency with overall national objectives.

23. A number of projects, showing a *prima facie* technical feasibility have been investigated and Project Profiles established, giving basic product data for the following industries: cement, cement pipes, asbestos cement sheets, grey cardboard, nylon fishing nets and lines, fishing hooks, metal tins and containers, agricultural implements, domestic electrical appliances, fluorescent tubes, electrical accessories. Copies of these Project Profiles will be made available to prospective entrepreneurs. (See Appendix I).

D. Policies and Programmes

24. Constraints due to the limitations of the local market on import substitution industries have been clearly demonstrated in the development of the 1960's. Much of this development would have been difficult to about without the sheltered environment of incentives, concessions and protection offered by the government. The cost to the national economy in the form of erosion of revenue and provision of infrastructure, the exact foreign exchange effect and the influence on the internal price levels will be studied in order to ascertain:

(*a*) the extent and the form of continued concessions and protection for industries grown under shelter;

(*b*) a revised range of incentives in the light of the anticipated scope of further import substitution.

25. In view of the limitations of the local market, strict performance norms will be required in granting concessions and incentives for additional import substitution industries. The following main tests will generally be applied:

(a) that local consumption is by itself sufficient to ensure commercial feasibility of the project at lower or equal price to the consumer;

(b) that the accumulated foreign exchange balance by the end of a period of 5 years (or such longer period that the special character of a project may justify, but maximum 10 years) from production day is shown to be positive, taking into account all foreign exchange costs, including the import content of locally used components and services (e.g. import content of electricity);

(c) that the direct and/or indirect employment effect and/or the forward and backward linkage effect is significant.

26. If commercial feasibility is based on the need to export a part of the production, test *(a)* above shall in general be considered *not* met, due to the inherent difficulties arising from the conflicting requirements of smallest possible scale for the homemarket and indispensable economies of scale for export marketing. Exceptions from this general rule may be occasionally justified, notably for projects aimed at exports to Reunion, Seychelles and Madagascar. Due to the nearness and suitable size of these markets and to existing traditional business contacts, it can be considered a suitable supplement to the local market.

27. The apparent benefits of using potential local raw materials shall be carefully estimated taking into account the total cost in imported equipment, fuel etc. needed to exploit them. The principal justification for the use of local raw materials shall be that they offer cost advantages compared to imported materials, or that their exploitation at equal cost, will have a significant employment effect.

28. Moderately increased costs for consumer goods (but not on inputs to agriculture and industry) can be considered in a project with exceptionally important foreign exchange benefits or employment effects.

E. Small Scale Industry

29. The Census of Industrial Production distinguishes between establishments engaging 10 or more persons, called " large establishments ", and those engaging less than 10 persons, called " small establishments ". Out of the total number of 3,660 establishments in 1968 (excluding sugar factories and electricity), 3,471 belonged to the category small establishments, engaging a total of persons equal to the 189 large establishments. Of the total net output in industry (excluding sugar factories and electricity) small establishments accounted for about 15 per cent. More than a third of the workforce in small establishments are engaged in establishments engaging one or two persons.

30. The total gross output in 1968 in small establishments was Rs 28 million and total net output Rs 10 million. The bulk of the production in terms of gross output was in the following sectors (excluding sectors where the output is chiefly in the form of repair work):

	000 Rs
Food manufacturing	6,400
Beverage industry	8,500
Manufacture of footwear, other wearing apparel and made-up textiles ...	4,500
Manufacture of furniture and fixtures ...	1,800
Manufacture of metal products, except machinery and transport equipment ...	1,300
Miscellaneous manufacturing industry ...	1,200
TOTAL ...	23,700

31. The total number of persons engaged in these sectors was 6,100 of which more than half in the manufacture of footwear and other wearing apparel.

32. It is estimated that at present about 10,000 persons are engaged in establishments of this category and that the number will increase to 12,000 by the end of the plan period.

33. Average productivity is estimated to about Rs 1,200 per person per year. The contribution to the economy of this sector of manufacturing is consequently modest in relation to the number of persons engaged.

34. In reviewing the present situation and the prospects of manufacturing, all industrial establishments, including those engaging less than 10 persons, have been taken into account. The policies and programmes formulated are consequently in principle applicable to all industrial establishments covered by the Census of Industrial Production.

35. It will, however, be necessary in implementing the industrial programme to distinguish between small scale establishments engaged in industrial production as such, handicraft and service activities. In order to enable Government to formulate separate policies and programmes for each category a census of this sector of the economy will be undertaken in 1972. Pending the findings of the census the following general outlines of policy may be stated.

36. The general policy of promoting maximum integration between existing economic structure and new industrial projects will be a principal consideration. The possibilities of manufacturing components within small scale industries on behalf of new industries will be in particular pursued. Also the prospects of manufacturing components on behalf of foreign industries will be investigated. Component manufacturing is potentially interesting *inter alia* because it could be organized for groups of small establishments, having no sales' organization of their own. It does not involve any marketing operations which are difficult to co-ordinate, but would require a co-ordination of production, quality control and deliveries, which is feasible.

37. Government assistance will be offered e.g. in the identification of potential component manufacturing on behalf of existing and new local industries or foreign industries; in organizing groups of manufacturers and advising them on technical planning and management; in providing quality control when requested by contractors for components and in offering credit facilities through the Development Bank as to long term capital requirements.

F. Handicraft

38. The anticipated growth of tourism will open a further potential for handicraft if systematically exploited. In this context it is essential to develop designs of souvenirs and other handicraft, which are generally of high quality and, in particular, appear distinctly unique for Mauritius. This might be achieved, apart from design development, by granting official approval to selected designs, giving the manufacturer the right to label his products accordingly. Official authorization of selected designs, which clearly distinguish Mauritian handicraft from that of other countries, would also be essential in the promotion of exports, with a view to the very competitive character of this trade.

39. Both in connection with sales locally to tourists and with export of handicraft there is a need for a joint organisation for research, planning, management and marketing. The government plans to promote the production of handicraft along these lines. For this purpose the resources and services of the Small Scale Industries Branch will be strengthened.

40. It is recognized that small scale industries, as now defined by the Census of Industrial Production, may contain a reserve of skilled labour, which is at present not very efficiently used. As there may be a shortage of skilled labour for new large scale industrial development, the census to be undertaken will explore the potential of this sector as a source of skilled labour for industrial development in general.

G. Present Manufacturing for External Markets

(a) PROCESSING OF AGRICULTURAL PRODUCE

(i) *Sugar Milling*

41. According to the Census of Industrial Production 1967/68, 23 sugar mills (since reduced to 21) spread over the island employed 5,022 in milling and another 1,153 in garages and workshops. Including employees of the three mechanical workshops working principally for the sugar industry, employees of sugar transport contractors and the large number of dockers required to handle sugar in the port, the sugar industry creates nearly as many jobs as all other manufacturing establishments (employing 10 or more) together. Its importance in terms of total indirect employment effect need not be elaborated.

42. The gross output in 1967/68 was Rs 286 million and net output Rs 77 million. Total labour cost, including labour in garages and workshops, was Rs 24 million. Total production has varied during 1960-1969 between 235 (1960) and 686 (1963) thousand metric tons. In the same period the Commercial Sugar Recovery rate has varied between 9.85 per cent (1960) and 11.93 per cent (1963). Exports of sugar amounted in 1967, 1968 and 1969 to Rs 277m, Rs 320m and Rs 326m respectively.

43. The present milling capacity is capable of coping with an anticipated 20 per cent increase in the size of the crop within the next 10 years, by extending the optimal crop duration of 120 days. Substantial reductions in milling costs can be achieved by concentrating still further the sugar milling capacity. This will require substantial investment which can be met, to a large extent, by depreciation funds, which have in any case to be spent on normal replacement of existing plant in order to maintain the productive capacity. Should such further concentration of milling take place, it would not significantly influence the employment rate of the sugar industry. Such a rationalization will have to be programmed in the light of increasing sugar production.

44. The sugar industry in Mauritius is traditionally operated on an, internationally speaking, advanced level of technology, research and management. When defining the principal asset of Mauritius, in the context of industrial development geared to external markets, as the combined comparative advantage of availability of labour adaptable to industrial technology and of industrial management, it must be emphasized that this claim is based, to a large extent, on the skills and the professionalism generated over many decades in the sugar industry.

(ii) *Molasses and other by-products of the sugar industry*

45. The greatest part of molasses produced is at present exported:

	1966	*1967*	*1968*	*1969*
Production (M tons) ...	133,114	151,404	132.707	166,332
Exports (M tons) ...	127.523	96,913	169,175	125,181

Of the production of alcohol from molasses, 1.2 million litres in 1969, only a minor part has been exported in recent years in the form of ethyl alcohol.

46. Prices obtainable for molasses have up till now been favourable enough to constitute a disincentive to the development of more extensive processing of molasses. The potential for export processing of molasses is examined below under the heading " Product orientation ".

47. Bagasse will be used as raw material for a particle board plant, which will come into operation in the near future. A substantial part of the production of 5,000 tons per year will be exported.

48. A paper manufacturing plant, based on surplus bagasse and which will export most of its production of 30,000 tons per year, has been suggested as accounted for below under the heading " Product orientation ".

(iii) *Tea Processing*

49. Eight tea factories at present provide employment to 408 persons. The gross output of tea factories amounted to Rs 11.2 million in 1967-68; the cost of materials, electricity and industrial services amounted to Rs 7.5 million and the cost of wages and salaries amounted to Rs 1.4 million. The tea industry has an important backward linkage effect and the total indirect employment in all establishments in this industry amounted to about 5,500 persons in 1969.

50. The present tea factory capacity is about 4,000 tons per year. The programme of increased tea production envisages a capacity of about 15,000 tons per year by 1980. Additional employment in phase I of the tea development project comes to about 400 workers in the factories. The total indirect employment in tea fields would increase to about 10,000 persons.

51. Exports of tea 1967, 1968 and 1969 amounted to Rs 8.4; 9.6 and 14.6 million respectively.

(iv) *Sack Factory and Aloe Fibre Industry*

52. Aloe fibre which grows mostly wild in Mauritius, is suitable for manufacturing sacks and cordage. There are five aloe fibre factories in Mauritius, which sell all their production to the Government Sack Factory in Quatre Bornes. The total production of aloe fibre is 1,500-2,000 tons a year.

53. According to the 1967-68 Census of Industrial Production in Mauritius, the aloe fibre industry engaged 657 persons and its gross output amounted to Rs 1.7 million. At present there are 450 persons engaged in the Government Sack Factory and its sale proceeds amounted to Rs [illegible] million in 1969.

54. One third of the production of the Sack Factory is sacks for the local sugar industry. The rest of the production is sold on export markets with increasing success. When bulk handling of sugar is introduced, the production will have to be almost entirely exported. The rapid increase of exports over the last years indicates that such a development is feasible.

	1966	*1967*	*1968*	*1969**
		Rs million		
Value of exports of bags ...	0.9	1.1	1.9	3.4

(v) *Dehydration of Ginger*

55. Government has granted a development certificate to a plant with an installed capacity of 5,400 tons of dried ginger per annum requiring 32,000 tons of fresh green ginger. It is initially taking up dehydration of ginger only due to assured foreign markets. The plant can, however, be used to dehydrate other products such as turmeric, chillies, spices, fruits and vegetables. The plant provides employment to 20 persons. The backward linkage effect is high.

(vi) *Processing of Other Agricultural Produce*

56. The availability of vegetables and fruits is insufficient at present in scope and regularity to support any processing for export. An anticipated expansion of the production of green beans and peas, cooking tomatoes, gourd, carrots, cauliflower, cabbage and other vegetables, partly by cultivation in cane interlines, may open possibilities for export processing also.

(vii) *Other Manufacturing for Export*

57. Exports of manufactures other than those of sugar, molasses and tea have been insignificant. The average total of such exports during the period 1965-1968 amounted to Rs 2.7 million. Of this, bags and sacks alone accounted for Rs 1.5 million. In 1969 these exports increased to Rs 6.2 million, of which Rs 3.8 million was due to bags and sacks.

58. The volume of Pre-Export Processing Zone exports of manufactures from Mauritius, apart from sugar, molasses, tea and sacks, has consequently been too small to create established external markets for other than a very few articles.

H. Development of Manufacturing for External Markets

59. Both in relation to the development of exports from home market industries and from new establishments, which are from the beginning geared to external markets, it will be necessary to adopt a broad concept of exports.

60. The fact that the global offer of export commodities, and the number of established suppliers and brands, are already abundant, must be recognized. It is therefore extremely difficult for any new supplier, and any new brand, to penetrate the export markets. Whenever at all possible it is generally a process requiring long time and expensive promotional efforts. This is true for industrialized, traditionally exporting countries and is more so for any developing country only beginning to industrialize. When in addition the local market is small, as in the case of Mauritius, these difficulties tend to be prohibitive.

61. An obvious alternative to the development of independent export manufacturing, and one which could yield quick results, is to seek co-operation with established suppliers. Such suppliers, with already established export markets and brand names, could be invited to take advantage of manufacturing and operating conditions in general in Mauritius, in cases where these are likely to be sufficiently favourable to make it profitable to locate the whole or parts of additional— or even re-locate existing—export manufacturing and marketing operation to Mauritius.

62. Such operations may cover a wide range of activities; from the complete manufacturing of export products, to the manufacture of components under sub-contract or in affiliated plants and to the stocking and distribution of products in connection with processing or manipulation of these products.

(i) EXPORT FROM EXISTING AND ADDITIONAL IMPORT SUBSTITUTION INDUSTRY

63. Attemps have been made to encourage established industries to branch out into exports. It is not surprising that the response has been in general poor. An industry geared to operate only in the local market, yielding reasonable profits, is reluctant to risk profits in expensive, difficult and hazardous attempts at export marketing, which generally requires production and marketing facilities in excess of those needed for local market operations. Exports to comparable markets in the near region, in particular to Reunion, can constitute exceptions to this general observation, as previously stated.

64. In spite of these constraints, and the emphasis in the Plan on the development of large foreign trade operations, efforts to develop increased foreign trade activities for industries now producing only for the domestic market will be encouraged by the Government for the following two categories of industries:

(a) existing industries having a production capacity considerably in excess of anticipated increase in local demand during the plan period and therefore needing to export in order to achieve full utilization of capacity and normal production costs;

(b) existing labour intensive industries, at present manufacturing mainly for the local market, where a traditionally high level of workmanship may be attractive to buyers in developed countries either in the form of ready, high value products or in the form of components. This includes industries such as: clothing, footwear, wood and rattan furniture, made up articles of aloe fibre (carpets, mats, wall-covering), boat building, heavy engineering, light engineering, commercial vehicle bodies, leather products and toys.

65. For industries now enjoying incentives granted for the purpose of promoting import substitution manufacturing, Government will consider export incentives after other incentives have run their stipulated duration. It would also be possible to renegotiate incentives.

66. The programme of official export promotion measures, in the form of participation in trade fairs, promotion through Mauritius official representation abroad, research, information and contact assistance from the Export Promotion Council, is designed to assist this sector of potential export manufacturing. The orientation of government policy in this respect will be aimed at a long term development of exports. Emphasis will be laid on component manufacturing on a sub-contracting basis. This type of export manufacturing eliminates marketing problems and also offers prospects to industrial sectors consisting of many small establishments as it is far easier to co-ordinate the production and delivery of components to a small number of contractors than the production and marketing of ready export products.

67. Official promotional measures abroad can have an irreparably negative effect if stimulated expectations concerning delivery capacities, quality and design are not met. An essential step will therefore be to take an inventory of industries having a real and significant export potential, and who are prepared to make commitments as to sustained efforts and expenses, matching the commitments on the part of the government concerning official export promotion efforts and other incentives.

68. In the light of policy stated for additional import replacement industries, such industries are not normally expected to engage in export marketing or to require government assistance in this respect.

(ii) MANUFACTURING EXCLUSIVELY OR PRINCIPALLY FOR EXTERNAL MARKETS

(a) Basic problems determining orientation of selection of projects

69. It is clear that the size of the domestic market and the structure of the existing industry does not alone provide a base for a significant development of manufacturing in Mauritius. Industrial development, on the scale and at the speed required, can only be brought about through the establishment of large scale foreign trade operations, completely or partly carried out in Mauritius.

70. The principal characteristics of the overall situation, to which the orientation of industrial projects selection and promotion in general must be geared, may be summarized as follows:

(i). There is an imperative need to create a large number of additional job opportunities.

(ii) The urgency of the need for job creation, necessitates preference for measures capable of yielding quick results.

(iii) The insignificance of the local market provides only a limited scope for further import substitution industry and for the development of exports from such industry; consequently extensive dependence on activities connected with foreign trade operations is necessary.

(iv) There is a general lack of established export markets for local manufactures.

(v) The lack of local raw materials requires dependence on imported materials. This requires consideration of transportation costs.

(vi) There is a need for immediate extension of infrastructure facilities.

In view of these considerations, the selection and promotion of projects in the manufacturing sector will be directed along the following main lines:

(a) Maximization of Employment

71. Emphasis on employment rather than on productivity is inevitable in the Mauritian context. Among other things, in considering the choice of priority, it is necessary to distinguish between two aspects of productivity. One is related to the nature of individual products and processes. Some are adaptable to a high degree of replacement of manpower with machines and consequently show high productivity per person engaged. Others are not adaptable to a high degree of mechanization and have therefore a lower productivity per person. As the principal purpose of industrialization in Mauritius is to generate new job opportunities, it would obviously not make sense to favour, as an element of deliberate policy, the establishment of this type of high productivity industry. A much larger volume of industry will have to be created, at a much higher cost, in order to generate the required number of jobs. Also, it would not be consistent with the principal comparative advantage claimed by Mauritius. The industrial development since 1964 illustrates well the implications of the choice. The essentially high productivity plants established for food processing and chemical products account together for less than 10 per cent of the increase in employment since 1964, although they share between them half the total increase in gross output.

The other aspect of productivity is related to the norms applicable within each industry. It is related to the efficiency of its management and its labour. High productivity on this level is implied in the comparative advantage of intelligent, reasonably priced, labour and management, claimed by Mauritius, and is therefore an element of government policy.

72. This does not necessarily mean exclusive emphasis on labour intensive projects. The adaptability of Mauritian labour to industrial technology is likely to be as stroug as an incentive to entrepreneurs as the reasonably low labour cost, and should in fact be promoted as a principal asset. This may attract industries with advanced technological methods and with a relatively low absorptive capacity for labour in relation to the capital invested. However, industry of this type may have substantial indirect employment—creating effects, by absorbing potential local raw materials and components and by estabishing links with the trade and services sectors. Also, there are possibilties for industries to choose, to some extent, more labour intensive techologies even in advanced technological processes.

73. Maximization of employment ould therefore be pursued both through directly labour intensive project, through substitution of labour intensive technologies for capital intnsive ones in technologically advanced industries and through indirec employment-creating backward and forward linkage to existing and newenterprises.

74. However, it will be necessary to take into account the rapid technical advances in productive equipment and the continuing international trend towards capital-intensive rather than labour-intensive operations. This presents a great challenge to any industrial development programme having for its primary aim the provision of additional job opportunities. Some processes will continue to be more labour intensive. Over the next decade, until something like near full employment is approached, it will be Government's policy to give discriminating incentives in order to attract more labour intensive processes. It would, however, seem inevitable that, as time goes on, a progressively greater volume of new industrial activity will be needed to provide a given number of jobs.

(b) The establishment of completely export oriented projects with evidence of established export markets

75. The establishment of foreign trade operations in co-operation with established manufacturers will bring, apart from large scale, established knowhow and organization related to technology, design and marketing, which otherwise are difficult to acquire and require a long time to develop. Such a line of action is consistent with the United Nations for the Second Development Decade, aiming at increased co-operation between developed and developing countries and is likely to benefit from new technical assistance programmes, both multi-lateral and bilateral, which may be established for these specific purposes, in particular the Generalised System of Preferences.

76. It may, of course, be in the interest of the national economy to foresee and even request sales from export industries to the local market, in particular of commodities, which are otherwise imported from abroad, and commodities which can be used as inputs in other local industries. In the latter case, if the receiving industry is an exporter, the admissible proportion of local sales may be considerable. In other cases, this proportion should be negligible considering the desirable type and scope of industries required.

(c) The use of local raw materials, packaging materials, components etc. or of imported materials, and the production of commodities, which have a high value/weight-volume ratio.

77. The heavy transportation costs, also in regional distribution, will tend to favour projects where the cost of transportation of materials and finished products is small in relation to the total value of the product.

(d) During an initial period the establishment of industries with low to moderate consumption of infrastructure, particularly electricity and water

78. The demand on electricity requires particular attention. Mauritius depends increasingly on thermo-electric methods of generation. The import content of such generation costs is rather high. Certain types of projects, e.g. involving metal smelting in electric furnaces, are likely to be precluded.

(e) Principal assets determining orientation of selection of projects

79. The inherent advantages, which may attract investors, can be as follows:

(i) Relatively inexpensive, but not cheap, manual and clerical labour.
(ii) Highly trainable and potentially skilled manual and clerical labour.
(iii) Experience in precision work and proven manual dexterity.
(iv) A sophisticated business community, with long experience in foreign trade, shipping and, in connection with the sugar industry, advanced industrial technology, capable and willing to co-operate with foreign entrepreneurs.
(v) Good air transport facilities and a potential for the development of large scale air freight operations and eventually also of improved surface freight facilities (see chapters on " Harbours and Airport ").
(vi) Provision of technical and vocational training facilities.

80. The most important asset of Mauritius is the availability of adaptable and reasonably priced labour. The combination of this comparative advantage with the availability of managerial skill in financial and technical matters is unique for a developing country. This combined comparative advantage, and the nature of the constraints, clearly indicate a general orientation towards the manufacture or part processing or other manipulation of products with a high added value, where the labour costs are a significant proportion of the value added, and where the value of imported materials and exported products is high compared to their weight/volume.

(f) Product Orientation

81. Pending research to identify suitable products and processes, a tentative list of commodity groups, comprising items consistent with the above defined constraints and advantages, has been elaborated in connection with a study of regional marketing prospects. (See Appendix VI). Additional criteria of interest in the wider concept of foreign trade operations, used in compiling the list, are:

(i) globally recognized speciality, involving few worldwide supplies and protected designs or compositions or otherwise production methods of such a special or advanced nature that the establishment of production in reviewed markets is possible or likely only as manufacturing on licence or in affiliated plants.

(ii) suitability for part processing either in the form of component manufacture or final processing before distribution.

(iii) pronounced requirements as to technical after sales services and/or supply of spare parts.

Investigations and research now under way are expected to indicate individual products, processes and suppliers which may be attracted to Mauritius.

(g) International sub-contracting

83. The manufacture of components on sub-contract, or under other arrangements, for manufacturers in highly industrialized countries is of particular importance to Mauritius. Many technologically advanced production methods are labour intensive in some stages of their production. As wages in these countries are high and are rising, and as competition, both in their home markets and on export markets is fierce, a source of inexpensive and adaptable Mauritian labour, combined with locally available companies for assets' and finance management, can be expected to be attractive to businesses in the industrialized countries for sub-contracting of the production of component parts, sub-assemblies and finished products, destined for their home markets and for export on a regional and/or global basis.

84. An additional important factor strongly favouring emphasis on component production is the fact, that practically all industrially advanced countries are parties to or have accepted international conventions or recommendations, under which liberal trade conditions are granted for goods re-imported after processing. The tariff and other barriers in the markets to which the processed components or sub-assemblies are returned will either be reduced to a minimum or be entirely non-existent.

85. The general procedure for component manufacture is for clients in the highly industrialized countries to give contract for such manufacture to independent industries in low wage countries. This system is feasible in Mauritius at present for e.g. the following range of products: period furniture; rattan furniture; clothing, including knitwear; wooden furniture, such as chair legs and other labour intensive furniture components; leather shoe uppers; wooden boat hulls; heavy engineering; light engineering; steel hulls for tugs and fishing vessels; commercial vehicle bodies and other parts; small tools; toys.

86. In the Mauritian context it would be important to attract foreign manufacturers to establish subsidiaries or joint ventures with Mauritian entrepreneurs, which could function as parties in sub-contracting arrangements.

87. The freedom and flexibility of operations offered in the Export Processing Zone, and even more so by geographical free zones now under study, is consistent with the concept of sub-contracting in its various forms and is likely to be instrumental in attracting this type of foreign trade operation.

(h) PARTICALLY LABOUR-INTENSIVE CONSUMER GOODS

88. The manufacture of some types of particularly labour-intensive consumer goods tends to be excessively costly in some highly industrialized countries in Europe. Such commodities are textiles, clothing, footwear, toys and wigs. Industries in Hong Kong, Singapore, Taiwan and South Korea have been very successful in developing extensive manufacturing of such products. There are indications that the very success of these industries may raise wage costs in these areas to a level where the manufacturers may find it profitable to consider Mauritius for the establishment of additional manufacturing units.

89. In the promotion of such manufacturing, it is important to consider that the marketing of these commodities is sensitive to changing economic conditions in the buying countries, causing such countries to introduce trade barriers for protection of local manufacturers.

(iii) EXPORT PRODUCTS BASED ON LOCAL RAW MATERIALS

90. There is a definite shortage of local raw materials. Such materials as are found economically exploitable should be utilized to the fullest extent possible for export products, as they would eliminate the constraint of transportation costs for imported materials and thus broaden the scope of feasible export manufacturing.

91. Raw materials such as bagasse, molasses, tea waste, tobacco waste and coral sand have a *prima facie* technical feasibility for use in export industries and will be further studied as to commercial and economic feasibility (See Appendix II).

(iv) MARKET ORIENTATION

92. As in the case of product of orientation, only extensive market research will eventually show the optimal choice of markets. It will nevertheless be useful to indicate the general character of alternatives to be investigated. They are, of course, not mutually exclusive and are to be considered in relation to directions indicated under the heading " Product Orientation ".

(v) NON-REGIONAL MARKET

93. The most important comparative advantage of Mauritius is its low labour cost. The most proximate markets have in general either correspondingly low labour cost, combined with protectionist trade policies, or comparatively high labour cost combined with high customs barriers. Other developing countries in the area have the same need as Mauritius to develop industry and would naturally be reluctant to freely admit competing manufactures from Mauritius.

94. The logic of this situation is that markets should be looked for in the first place where labour costs are high and increasing, where the purchasing power for this very reason is high, and, finally where trade regimes are comparatively liberal.

95. In varying degrees, markets which fit in this situation are the EEC and EFTA countries, particularly U.K. since it will admit Mauritian manufactures at zero tariff rates in any quantities; Australia which grants preferential tariff treatment for certain products from developing countries; South Africa; U.S.A., which has recently stated its intention to increase imports of manufactures from developing countries in Africa and Asia. Priority will initially be given to these areas,in particular the U.K. and Australia, in examining the market prospects.

96. Certain other areas with a high and increasing purchasing power may offer good prospects, such as the oil-rich states in the Middle East and North Africa, Japan, Taiwan and Singapore.

97. Of extreme importance in considering markets for Mauritian manufactures is the Generalised System of Preferences (GSP) which has emerged from negotiations within the United Nations Conference on Trade and Development as a part of the international strategy for development in the " Second United Nations Development Decade ". The object of the system is for developed countries to grant generalized, non-reciprocal and non-discriminatory preferences to manufactures and semi-manufactures from developing countries, in order to promote their industrialization. The developed countries have reached agreement on these arrangements and are now taking legislative and other measures with the aim of starting to implement the preferential arrangements as early as possible in 1971. The co-incidence of the implementation of this system and of the increased efforts to develop industry in Mauritius could be most beneficial to Mauritius and will be exploited intensively. The Generalised System of Preferences is not uniform. It is in the form of several individual different schemes, the implementation of which is likely to be complicated. It will be necessary to organize the collection of information concerning the various schemes (not yet available for Australia) and to analyse and to master as soon as possible the technical aspects involved in the functioning of the system.

(vi) REGIONAL MARKETS

98. Markets available due to the geographical position of Mauritius can be defined as those bordering on or adjacent to the Indian Ocean. Broadly speaking, this area is characterized by a great number of comparatively small, non-industrialized markets, a smaller number of larger, oil-rich markets in the Middle East and some industrialized countries, where manufactures from Mauritius may benefit from the Generalised System of Preferences.

99. Taking into consideration the existing and the anticipated development of sea and air links to Mauritius, the potential regional marketing

area of Mauritius can be considered also to include Japan, the landlocked markets in the interior of Africa, the main markets of West Africa and the oil-rich markets in North Africa.

100. Apart from the highly industrialized markets of this area—including Hong Kong, Singapore and Taiwan—and some of tthe oil-rich markets, these markets are generally in a position similar to that of Mauritius, having low labour cost, attempting to industrialize and protect their infant industry by trade barriers.

101. The abundance of inexpensive labour in Mauritius does not therefore by itself constitute a comparative advantage in these markets. In the regional market, the real advantage of Mauritius lies in the low cost manual labour force being supplemented by labour adaptability to industrial technology, abundance of skilled, bilingual clerical labour, experienced business community capable of providing management and/or partnership and ample sea and air freight facilities.

102. The fact that manufactures are subject to high fiscal import tariffs and often heavy bureaucratic controls in many of the regional markets constitutes an advantage to Mauritius as a potential base for regional manufacturing and distribution. The location in Mauritius would enable the supplier to minimize also his marketing costs. The importance of this advantage is enhanced by the fact that the marketing area is divided in a large number of small markets.

103. As an alternative to complete manufacturing, suppliers established in the region, or suppliers intending to introduce or expand the sale of their products in the region, may find it attractive to locate the final processing, packing, etc., in Mauritius. Considerable savings may be effected, i.e. in transportation costs, by using locally produced materials, in particular packaging material. In cases where the value added in Mauritius is significant, the products may have the advantage of the Generalized System of Preferences.

104. The potential advantages offered by Mauritius as a location for regional marketing operations may be summarized as follows:

(a) It will not be necessary to manitain extensive inventories in each separate market, thereby avoiding the always present risk of having excess inventory in one market while shortages occur in another.

(b) Capital tied up in inventories can therefore be significantly reduced and hence greater turnover.

(c) Co-ordinated sales supervision for a group of markets.

(d) Flexible stockpiling, i.e. orders can be quickly processed on the spot for a group of markets to fit current requirements to specific markets.

(e) Skilled clerical and manual labour at low cost for the operations involved, leading to substantial savings.

(*f*) For commodities more regularly shipped by air, substantial savings in transportation costs can be achieved by shipment in bulk by fast sea liner services to Mauritius and by redistribution by air. The greater volume of individual shipments (in bulk) to Mauritius will enable the shipper to negotiate favourable rates. Transportation costs for commodities both received and distributed by sea may therefore be equal to or even lower than for a direct delivery by sea to any individual market in the region.

105. As an illustration of the types of commodities which may be considered, of the total size of the market area and of the relative importance of individual markets in the potential region, statistics have been prepared for selected commodity groups. (See Appendix VI).

106. Prospects of participating in integrated regional trading areas will be gradually explored. However, global experience in this field shows that the organising of such areas is a slow and complicated process. Furthermore, these prospects will have to be very carefully weighed in the Mauritian context against other alternatives. Regional integration in industrial development amounts essentially to the introduction of a policy of import substitution and consequent protective measures on a regional basis. The integrated area would have to be large to make the integration economically viable in competition with now established suppliers, producing on a very large scale. The suggested system of co-operation with established suppliers, involving the transfer of knowledge and the whole or parts of their manufacturing and marketing operations, is likely to offer more immediate possibilities to achieve the fast development of industrial and related activities that is essential to Mauritius.

107. An additional regionally based activity, the development of Mauritius into a point of trans-shipment, both by sea and by air will also be pursued. With the fast technological development of seaborne traffic, involving much bigger and faster ships and containerization of goods, and the equally fast development of air freight, the potentially strategic geographical position of Mauritius may become increasingly important. (See chapters on "Harbour and shipping" and on "Airport and Air Traffic".) These activities would not only create employment and foreign exchange gains by themselves but would offer Mauritian industries a wide range of favourable transportation facilities for imported materials and exported products.

I. Policies and Programmes

108. As accounted for in section B the government started introducing already in the early 1960's extensive concessions and incentives aiming at stimulating industrial development. These were applicable also to export manufacturing. Further, the Customs Tariff in the revision of 1969 was made liberal in the taxation of materials and equipment identifiable as being exclusively for industrial use.

J. The Export Processing Zone Scheme

109. With the introduction of the Export Processing Zone Act of December 1970, an important additional system of concessions and incentives was put into operation, aiming particularly at export manufacturing. The Scheme represents in fact an implementation of those objectives of the plan for industrial development which are based on the prospects of attracting large scale foreign trade operations.

110. The concessions/incentives' package is extensive, including the following principal benefits:

(a) Complete exemption from payment of import duty on capital goods (machinery, equipment and spare parts).

(b) Complete exemption from payment of import and excise duty on raw materials, components and semi-finished goods (except spirits, tobacco and petroleum products).

(c) Corporate Income Tax holiday for a minimum of 10 years and a maximum of 20 years, depending on the merits of each case.

(d) The issue of permanent residence permits to promoters and shareholders as warranted by the size of their interest.

(e) Priority, wherever possible, in the allocation of investment capital by the Development Bank of Mauritius.

(f) Provision of reinforced factory buildings for use by industrialists; alternatively loans of up to 50 per cent of total building cost for a 10 year period.

(g) Government contribution to the cost of approved export market surveys, trade missions and trade fairs.

(h) Free repatriation of capital and remittance abroad of profits and dividends to companies with an approved status.

111. In addition to these benefits, a wide range of ancillary benefits and services are offered, such as electric power at preferential rates, information on export markets through the Export Promotion Council and exemption from various fees and dues otherwise chargeable to goods, lands and buildings.

112. The Export Processing Zone system does not constitute a geographically limited zone. It amounts to a very liberal system of " bonded factories " in which a single industry, or a group of industries, are declared export processing zones and enjoy largely the advantages enjoyed in a geographically limited free zone. As the licensed factories will be within the customs area a certain amount of administrative control is inevitable. This has, however, been limited to an absolute minimum. Guarantees concerning immediate issues of import and export licences, completion within 24 hours of customs' processing of any incoming and outgoing consignment have been made a part of the

incentives' package. On the other hand the system offers an important advantage to investors, namely a choice of sites best suited to their purpose.

113. The Export Processing Scheme is now in operation. By April 1971 20 investors had been licensed under the scheme; of these 5 have started initial production employing a total labour force of 625.

114. The Export Processing Zone System expresses the government policy of creating conditions as conducive as possible to the establishment of manufacturing connected with large scale foreign trade operations.

115. It is a part of this policy to consider and negotiate, within the framework of the maximum incentives' package, alternative incentives whenever found necessary in order to countervail specific constraints in projects deemed consistent with national policies. This may be the case in relation to the training of labour. Mauritian labour has proven to be intelligent and adaptable but there may initially be a shortage of trained labour, needing only a finishing, on the job training in specialized techniques. Until the technical training system is fully instituted, it will be necessary in some projects to provide extensive on the job training. It is recognised that the expenses and hazards involved for the prospective investor can occasionally reach a level, where they may be considered a disincentive. In this respect the government is prepared to negotiate countervailing incentives.

116. Another potential constraint, which may justify the consideration of alternative incentives is the high level of transportation costs. In general the transportation costs, at least until increasing traffic volumes result in reduced freight rates, necessitate emphasis on imported materials and components and on exported products, which have a high value in relation to weight/volume. Even so, reasonably priced facilities for air freight may be a prerequisite for some projects. The Government is at present investigating the possibilities of expanding air freight facilities, including the feasibility of an exclusive air freight operation based on and run from Mauritius (See chapters on " Harbour and Shipping " and " Airport and Air Transport ").

K. Geographical Free Zones

117. Existing concessions and incentives offered to manufacturing establishments, in particular the flexible Export Processing Zone scheme, constitute an optimal economic and operational environment for export manufacturing in all forms.

Some other anticipated foreign trade operations, not involving full manufacturing but processing or manipulation connected with the marketing and distribution of goods manufactured elsewhere, may require the facilities of geographical free zones. Such facilities may be particularly conducive to the use of Mauritius as a base for regional distribution and as a point of trans-shipment in the region. Free zones may also be particularly suitable for the manufacture of components by foreign industries through affiliated plants in Mauritius, in view of the freedom of operations offered by free zones.

The Government is studying the feasibility of establishing free zones in the port of Port Louis and at the international airport. The study will be completed before the end of 1971. (See also chapter on " Commerce ").

L. Direct Government Participation

118. In addition to its participation in the form of development loans and other commitments, government will also consider direct participation by taking up equity in projects considered particularly important to the overall economy, e.g. projects providing essential inputs to vital sectors of the economy. In particular, such participation will be considered for projects which are either marginal from a commercial point of view but become profitable when indirect benefits are considered or are essential to development and private initiative is not forthcoming.

M. Local Trade Linkages

119. Experience elsewhere has shown that local trade linkages have tended to be overlooked in cases of rapid industrial development, based largely on foreign investment. Mauritius offers, in fact, for a developing country an unusually wide range of professional and industrial services and supplies. It is of great importance that the use of these services, and the development thereof, are integrated in the implementation of the industrial development plan. Firstly, it is the legitimate right of the local companies concerned to participate as fully as possible in the development of new industry, secondly, the availability of such supplies and services are important to prospective investors, as they would normally tend to reduce costs.

120. An industrial development of this type could lead to the establishment of important subsidiary industries. Of particular importance are packaging materials of all types, of paper, board, wood, metal and plastics. The manufacture of components on behalf of new industries in Mauritius is equally important. Many of the types of industries that are likely to be interested in establishing in Mauritius normally buy components from sub-suppliers, and might even consider the non-availability of such components, a disincentive. It is clear that local entrepreneurs have a very important function in this respect. It will, therefore, be essential to identify the components normally purchased from sub-suppliers in each type of product being considered or promoted and to encourage and make it possible for local entrepreneurs, including small establishments, to negotiate supply contracts at the early stages of the preparations for any industrial establishment. Of equal importance is to prepare and present to prospective investors detailed information on available and potential supplies and services.

121. An essential element of Government policy is therefore the maximum integration of the local business community in the scheme of planned development. The actual and potential industrial and professional supplies and services available are considered an important incentive to new establishments.

N. Project Evaluation

122. In any project where government participation in various forms is substantial it is important to government to make a reasonably thorough evaluation of its consistency with national objectives and of the main aspects of commercial and economic feasibility. It is equally important that such evaluations are made swiftly and in accordance with internationally accepted business practice. An evaluation routine meeting these requirements has been prepared and will be put into practice.

O. Promotion

123. It is recognized that government will be required to undertake a very extensive promotional campaign in order to introduce Mauritius to the world business community as a base for export and component manufacturing and marketing. Government machinery both at home and abroad will be re-structured and geared to this task and will be supplemented by the services of international consultants.

124. The main features of a co-ordinated promotional campaign will be:

(*a*) distribution of information on facilities, advantages and incentives in the form of brochures, advertising, newspaper and trade magazine articles, displays at selected trade and industrial fairs and talks by Mauritian trade attaches abroad to public and private trade industry and export/import organizations;

(*b*) continued identification of possible projects, including marketing prospects, and publication of Project Proposal Data Sheets;

(*c*) identification of suitable entrepreneurs and private investment organizations and selective individual approaches to them through the trade attaches and/or through Mauritian entrepreneurs capable and willing to participate as partners or managing agents;

(*d*) organization of visits to Mauritius of selected entrepreneurs and representatives of private investment organizations.

Particular emphasis will be laid on selective, individual promotion, directed at identified suitable entrepreneurs.

P. Administration

125. The industrial development programme will require administrative and technical services of a high quality within the government. The resources of the Ministry of Commerce and Industry will be strengthened along the following main lines:

(a) The speedy processing of applications and other matters connected with the Export Processing Zone scheme, and in general the cutting of red tap to a minimum, is one of the main features of the scheme. *A separate adminsirtative unit* for the management of the *Export Processing Zone operations* is therefore being formed. The establishment of an independent Export Processing Zone Authority, which will be responsible for all decisions and administrative procedure concerning EPZ will be studied.

(b) Project Formulation and Evaluation Group. Apart from functions concerning project research and evaluation in general the group will have the following special functions:

(i) identify processes in technologically advanced production units proposed, which could be replaced by more labour intensive methods:

(ii) identify potential or normally purchased components in existing or prospective projects, which could be supplied from existing local manufacturers or for which local manufacturing could be established;

(iii) review prospects of component manufacturing on behalf of industries abroad;

(iv) review continuously the progress of integration in general between existing manufacturing and industrial and professional supplies and services on the one hand new establishments on the other.

(c) Data Collection Group A Data Collection Group will be formed with the following main functions:

(i) to supply market and other non-technical information to the Project Formulation and Evaluation Group, and to other Government agencies concerned;

(ii) to supply market information, including comprehensive trade statistics surveys, to existing and prospective projects.

(d) Promotion Group apart from promotion, this unit will also be responsible for preliminary negotiations with prospective investors and for participation in international conferences.

126 These services and the government's increased involvement in general in international trade relations, including relations with UN agencies, will require a strengthening of the official represntation of Mauritius abroad with initially three commercial officers at strategic points, and a corresponding strengthening of the supporting base in Mauritius. Under multilateral and bilateral technical assistance Programme experts are at present available for the training of staff. Further technical assistance has been requested.

Q. Industrial Sites

127. The bulk of industries established so far in Mauritius are concentrated in Port Louis, owing mainly to the availability of Crown Land and adequate infrastructure. It would appear that the advantage that Government offers in the context of the Export Processing Zone policy might attract industrialists outside Port Louis. However, Crown Lands suitable for manufacturing industry are scarce outside the capital. Thus, one problem facing the spread of industries, is the difficulty of purchasing private land for development, or for leasing to developers on attractive terms. The provision of infrastructure also constitutes an important problem.

128. A certain amount of decentralization of industry is desirable in the context of overall national economic development, and it is one of the main advantages of the Export Processing Zone Scheme that it permits decentralization. This will require the extension of infrastructure services in non-urban areas.

129. The following areas are available for development in the near future:

	Acres
PORT LOUIS	
The *Coromandel* area of about 60 acres of private land; ...	60
The *Plaine Lauzun* Industrial Area of about 110 acres. All but 14 acres have already been leased; of the remaining 14 acres half will be developed by the Development Bank and half will be transferred to private industry	14
The *La Cure* area of 50 acres Crown Land	50
The *Mer Rouge* area, about 50 acres is being reclaimed at present and an additional 200 acres are expected to be reclaimed by April 1973 ...	250
TOTAL—PORT-LOUIS	374
CUREPIPE	
A site of about 100 acres of Crown Land outside the present township boundary has been earmarked for industries ...	100
VACOAS-PHOENIX	
An area of about 50 acres of private land, at present in cane cultivation, has been recommended for industrial use ...	50
ROSE HILL	
The township has approved that initially 35 acres of private land at Coromandel be zoned for industrial development	35
QUATRE BORNES	
An area for small scale industry at Bassin	25
SCATTERED SITES	
About 30 acres of Crown Land, dispersed over the island, would be available for industry	30
GRAND TOTAL ...	614

130. The Coromandel area could be immediately developed without considerable difficulty, as water is available on the site and electricity mains pass nearby. The development of the Mer Rouge area could be started as soon as the reclamation is completed by mid 1973. Of the remaining areas, La Cure and Vacoas—Phoenix seem most suitable for industrial development, although the supply of infrastructure may initially pose some problems.

131. Assuming that 10,000 additional work-places will be created under the plan period, and that 6,000 of these will be in single storey buildings with a density of 45 work-places per acre and 4,000 in flatted factories, with a density of 200 work-places per acre, the total acreage need up to 1974/75 would be about 155 acres. The total building floor space required, assuming a density of 150 square feet per work-place, would be 1,500,000 square feet.

132. The cost of industrial land development (excluding land value or rent) is estimated at Rs 50,000 per acre. The cost of industrial buildings is estimated at Rs 30 per square foot.

R. Policies and Programmes

133. In order to meet the anticipated demand up to about 1977 the following projects will be started during the plan period (listed in priority order):

1. Development of the Coromandel Area, 60 acres
2. Construction at Coromandel of 324,000 square feet floor space (=30 acres built)
3. Development of Vacoas—Phoenix Area, 50 acres
4. Development of La Cure Area, 50 acres
5. Construction at La Cure and Vacoas—Phoenix of 540,000 square feet floor space (=50 acres built)
6. Development of 100 acres at Mer Rouge
7. Construction at Mer Rouge of 540,000 square feet floor space (=50 acres built)
8. Development of industrial site in Curepipe.

134. It is assumed that the government in accordance with the incentive package offered to Export Processing Zone entrepreneurs will be called upon to supply industrial buildings for half of the industrial site area employed.

135. The plan for the construction of buildings will be flexible and modified according to requirements.

8. Employment, Investment and Output

136. Employment in the manufacturing sector, sugar and tea processing, is anticipated to increase from 18,100 at present (of which 9,000 in establishments employing 10 or more). The increase in employment in this sector in the plan period will be limited since it will take a year or two for the development of the necessary infrastructure. By 1975 employment is expected to reach 28,400 (of each 17,000 in establishments employing 10 or more).

The increase of 10,000 in employment and the additional investment required in fixed assets (including buildings), can be expected to be made up as follows:

	Additional employment	*Additional investment Rs million*
Development towards full capacity utilization of existing manufacturing for local market (establishments employing 10 or more) ...	500	5
New import replacement manufacturing (establishments employing 10 or more (including very capital intensive plants for chemical fertilizers and cement, together accounting for 315 additional employment and investment of Rs 80 million)	1,800	107
New establishments employing less than 10 ...	2,000	7
New export manufacturing (establishments employing 10 or more)	5 700	102
TOTAL ...	10,000	221

137. Based on a projected average productivity of Rs 5,800 per employee in establishments employing 10 or more and of Rs 1,400 in small establishments, the total value added in manufacturing, excluding sugar and tea processing, will by the end of the plan period amount to Rs [illegible] million p.a., or a gross output of about Rs 243 million p.a. Assuming that sales from export manufacturing to the local market are balanced by exports from manufacturing for the local market, the gross output value of export manufacturing excluding sugar and tea would reach about Rs 76 million p.a. by the end of the plan period.

138. It is Government's policy to protect the interests of both the consumers and the industrialists. In order to continue to do so more effectively a section in the Ministry of Commerce and Industry will be established to control the quality of industrial products.

APPENDIX I

Cement

The prospects of setting up a cement plant with a capacity of 100,000 tons per annum have been under consideration by Government for some time. Imports of cement touched 103,000 tons in 1964, but declined in 1968 due to various reasons. Demand again rose in 1969 and it is anticipated that the planned development of infrastructure, industry and housing will require imports of much larger quantities of cement in the coming years. Even a modest per capita consumption level of 125 kgs by the mid-seventies, would augment consumption to over 100,000 tons. Presently no cement producing facility exists. Since adequate quantities of raw materials (coral sand) are available in the country and the cement industry is expected to encourage establishment of other cement-based industries, the project deserves consideration. A Project Profile has been elaborated.

Cement Pipes and Cement Poles

Schemes for the development of agricultural water supply, drinking water supply, drainage, industrial buildings, electric power distribution etc. will call for substantial requirements of new pipe lines and poles. If cement production is established, it would be desirable to encourage the use of cement pipes and cement poles to the extent possible. A Project Profile for a plant with a capacity of 5,000 tons per annum has been elaborated.

Asbestos Cement Sheets

On similar considerations the establishment of an industrial unit for the manufacture of asbestos cement sheets may be feasible. A Project Profile has been elaborated, indicating the principal requirements of raw materials and other inputs for a plant of a capacity of 5,000 tons/year.

Nylon Fishing Nets and Fishing Lines

An increase in the requirements of fishing nets may be anticipated. A unit with capacity to produce about 8 tons/year of nylon fishing nets and fishing lines may be feasible. A Project Profile has been elaborated.

Fishing Hooks

With the increasing emphasis on the development of fisheries, the demand for hooks will increase. A project Profile for the manufacture of 15,000 hooks per year has been elaborated.

Metal Tins and Containers

The development of food processing and canning industries and the requirements of existing manufacture and/or distribution of petroleum products, paints, varnishes, margarine etc may support an industry for the manufacture of metal tins and containers. A Project Profile for a manufacturing unit with a capacity of 25 tons/year has been elaborated.

APPENDIX I—*continued*

Agricultural Implements

The types of tools and implements most suited to local needs will have to be identified before a unit is projected. A tentative Project Profile for the manufacture of 60 tons/year of agricultural tools and implements has been elaborated.

Domestic Electrical Appliances

At present all electrical appliances are being imported. It is considered that the production of items like electric heaters, hot plates, electric irons and toasters may be feasible. A Project Profile for manufacture of 30,000 pieces of electric appliances per year has been elaborated.

Fluorescent Tubes

A unit with a capacity to manufacture 20,000 fluorescent tubes per annum has been considered feasible and a Project Profile elaborated.

Electrical Accessories

The demand for electrical accessories like tumbler switches, ceiling roses, fuse cutouts, lamp holders, plugs, sockets etc is being met exclusively from imports at present. A Project Profile for the manufacture of electric accessories has been elaborated.

Pesticides, Insecticides etc.

It is estimated that the requirements of the country by the next few years would be of the order of 250 tons per annum. A manufacturing unit on the basis of present demand will not be economical. A formulation unit may, however, be established, based on imported raw materials. A 250 tons per annum pesticide and insecticide formulation unit would approximately cost Rs 450,000 and generate employment for about 40 persons.

Livestock Feed Mill

Government operates a livestock feed mill at Richelieu with a capacity of 5,000 tons a year. Imports of compound feed (from South Africa) are currently around 7,000 tons a year.

The feed mill will be completely modernised and enlarged to a capacity of 20,000 tons a year on a one-shift basis. The enlargement of the mill, at its present site, will include bulk storage capacity for raw materials for four months to safeguard against interruptions in supplies and to enable imported raw materials to be bought in substantial quantities at favourable prices in the world market.

The enlargement of the mill will cover all present and prospective requirements for compound feeds on the Island up to the middle of the decade. The advantage of a feed mill located in Mauritius to meet all the requirements for compound feeds for the livestock industry are that it will be able to produce feeds to meet the specific requirements of the various types of livestock at the lowest cost under the conditions found in Mauritius and that it will be able to make full use of available local raw materials, although the bulk of the raw materials, in particular grains, will need to be imported.

The policy of the mill will be to produce the most efficient feed at the least cost to the livestock producer. The profits to be made in the livestock industry will be made by the livestock producer, *not in feed milling*. The feed milling industry *will therefore remain in the public sector*. The feed mill will, however, be run on commercial lines like any other business, the difference being that it will not be expected to maximise *its profits*, which *should be kept close to but not less than zero*, but to minimize the sale prices of its products.

The mill will be operated in the closest technical co-operation with the main consumers of its products, who will be invited to participate in its management and, if they so wish, *to participate financially* in the undertaking.

Building Bricks

The possibility of setting up a Ceramic Industry in Mauritius, based upon the indigenous clays, was studied recently and it was concluded that a 50 ton/day plant can be set up at a cost of about Rs. 1 million, with the main objective of producing hollow bricks, warped bricks and pavement slabs. Although it was assumed that the production from a plant of the above capacity could be locally consumed, this aspect will require a study in greater detail in relation to the possible development of existing cement brick industry.

Wheat Flour

A proposal for the establishment of a flour mill costing Rs 9 million was considered in the past. As the project was a capital-intensive one and employment potential was low, the project has been deferred for the time being. The average quantity of wheat flour imported during 1965-1969 was 35,000 tons per annum. The increasing local demand may be sufficient to support a flour mill, *in particular if it is combined with the utilization of bran for feed milling*.

APPENDIX II

Bagasse

The surplus available after requirements are met for use as fuel in electric power generation is about 160,000 tons per annum.

The manufacture of paper, alternatively newsprint, appears technically feasible. A Project Profile for the paper industry has been elaborated.

Molasses

The annual production of molasses is about 150,000 tons a year. On average about 125,000 tons per annum are exported and about 6,000 tons are used for the production of alcohol. The export price has so far been a disincentive to the increased use of molasses as a raw material for industry. Should this situation change, the export manufacturing of rum, vinegar, mono sodium glutamate, ethyl alcohol and yeast for animal feeds may be feasible.

Tea Waste

In view of the anticipated increase in tea production the quantities of tea waste are expected to be sufficient to sustain the production of a 5 ton per annum caffein plant. A Project Profile has been elaborated.

Tobacco Waste

The quantities of waste available are estimated to be sufficient to sustain an annual production of 2.5 ton of Nicotine Sulphate. A Project Profile has been elaborated.

Coral Sand

There are ample reserves of pure calcium carbonates in the form of coral reefs and coral sands which could provide raw material for chemical and construction industries.

A study comprising the technical and economic feasibility of all lime based industries will be undertaken so as to assess the extent to which this single economically significant raw material available in abundance could be utilized.

APPENDIX III

Employment and Output in Industry 1968-70

	1968 Census of Industrial Production					Estimates December 1970		Value of Imports (Rs 000)			
	No. of Persons Engaged	Gross Output in Rs 000	Cost of Electricity, Material and Industrial Services Rs 000	Labour Cost Rs 000	Net Output Rs 000	No. of Persons Engaged	Gross Output Rs 000	Imports 1969 Per Group		Imports Specific Items Average 1965–69	Imports Specific Items 1969
1. Non-metallic mining and quarrying	171	588	96	295	492	171	588	—		—	—
2. Food manufacturing industries, except beverage industries and sugar factories	1,627	23,415	16,101	3,580	7,314	1,898	50,647	62,863			
								of which :			
									Yeast	190	163
									Feeding Stuff for animals	4,066	4,834
3. Beverage industries ...	1,069	31,684	21,610	3,155	10,074	1,060	31,400	4,244			
4. Tobacco manufactures *(a)* ...	—	—	—	—	—	—	—	523			
5. Manufacture of textiles *(b)* ...	1,057	5,135	2,663	1,503	2,472	1,157	5,635	22,529			
								of which :			
									Textile fabrics	17,823	17,445
									Fishing nets	126	205
6. Manufacture of footwear, other wearing apparel and made-up textile goods *(c)*	3,618	7,590	3,519	1,316	4,071	4,107	13,320	9,719			
								of which :			
									Clothing	7,297	5,827
									Footwear	2,841	1,861
7. Manufacture of wood and cork, except manufacture of furniture	617	1,219	486	303	733	622	1,124	4,469			

8. Manufacture of furniture and fixtures	869	3,249	1,596	746	1,653	912	4,300	472			
9. Manufacture of paper and paper products	32	74	49	10	25	66	527	6,661			
of which :											
Paper products	32	74	49	10	25	66	527		of which :		
									Newsprint, printing, wrapping paper	1,706	2,088
									Stationery	758	716
10. Printing, publishing and allied industries	848	5,714	1,901	2,397	3,813	871	6,232	3,437			
11. Manufacture of leather and leather products except footwear	54	668	453	136	215	54	668	532			
12. Manufacture of rubber products *(d)*	133	1,547	850	233	697	183	2,347	5,386			
									of which :		
									Tubes and tyres	3,688	3,281
									Medicinal and surgical articles	115	148
13. Manufacture of chemical and chemical plastic products	361	8,513	4,569	850	3,944	434	9,740	42,995			
									of which :		
									Soaps and toilet preparations	6,255	3,949
									Pharmaceuticals and starches	7,586	7.947
									Fertilizers	18,261	17.100
									Pesticides	4,564	4,157
									Synthetic plastic material	1,189	1,621
									Inorganic chemicals n.e.s.	1,500	1,921

NOTE : For 33 industries which were in production in December 1970, figures are not available.

(a) Figures for tobacco manufactures are included in and form the greater part of 21.
(b) The figure refers mainly to production of aloe fibre and made-up sacks and cordage ; imports include piece goods
(c) Local production excludes sacks and cordage (see Note 'b')
(d) Local production mainly tyre retreading.

APPENDIX III—*continued*

	1968 Census of Industrial Production						*Estimates December 1970*		*Value of Imports (Rs 000)*		
										Imports Specific Items	
	No. of Persons Engaged	*Gross Output Rs 000*	*Cost of Electricity, Material and Industrial Services Rs 000*	*Labour Cost Rs 000*	*Net Output Rs 000*		*No. of Persons Engaged*	*Gross Output Rs 000*	*Imports 1969 Per group*	*Average 1965–69*	*1969*
14. Manufacture of petroleum and coal	—	—	—	—	—		—	—	31,468	—	—
15. Manufacture of non-metallic mineral products except products of petroleum and coal	752	10,009	5,288	1,637	4,721		662	8,009	13,097		
									of which :		
									Cement	8,016	8,344
									Asbestos products	770	899
16. Basic metal industries ...	—	—	—	—	—		—	—	10,560		
									of which :		
									Blooms, ingots	164	370
17. Manufacture of metal products except machinery and transport equipment	759	4,027	2,488	845	1,538		829	4,427	9,376		
									of which:		
									Metal containers	1,483	852
									Household utensils	715	1,684
									Hardware	1,092	871
18. Manufacture of machinery except electrical machinery	768	7,310	4,440	2,559	2,870		700	7,240	13,705		
									of which :		
									Agricultural machinery	1,128	1,573
									Mining construction and other indus-		

19. Manufacture of electrical machinery apparatus, appliances and supplies	294	1,942	788	526	1.154	344	2,842	17,537		
								of which :		
								Domestic electric appl.	352	344
								Elec. batteries and bulbs	942	866
								Elec. machinery n.e.s.	3,272	3,034
								Refrigerators	830	810
								Elec. stoves	687	684
20. Manufacture of transport equipment	2,445	16,199	8,651	3,942	7,548	2,545	18,199	11,114		
21. Miscellaneous manufacturing industries	1,057	31,949	22.733	2,754	9,216	1,442	32,564	14,891		
	16,551	160,832	98,281	26.787	62,551	18,057	199,809	287,944		

NOTES : For 33 industries which were in production in December 1970, figures are not available.

(a) Figures for tobacco manufactures are included in and form the greater part of 21.

(b) The figure refers mainly to production of aloe fibre and made-up sacks and cordage ; imports include piece goods

(c) Local production excludes sacks and cordage (see Note 'b')

(d) Local production mainly tyre retreading.

APPENDIX IV

Increase by Industrial Groups in Gross Output and Employment 1964-1970

	1964		1968		Estimate December 1970			
	Gross Output Rs 000	*No. of Persons Engaged*	*Gross Output Rs 000*	*No. of Persons Engaged*	*Gross Output Rs 000*	*% Increase From 1964*	*No. of Persons Engaged*	*% Increase From 1964*
1. Non-metallic mining and quarrying ...	709	182	588	171	588	−17.1	171	−6.8
2. Food manufacturing industries excluding sugar	19,292	1,517	23,415	1,627	50,647	163.0	1,898	25.1
3. Beverage industries	25,860	930	31,684	1.069	31,400	21.7	1,060	13.9
4. Manufacture of textile	3,217	856	5,135	1,057	5,635	75.2	1,157	35.1
5. Manufacture of footwear, other wearing apparel and made-up textile goods	3,345	1,253	7,590	3,618	13,320	298.2	4,107	227.8
6. Manufacture of wood and cork	1,438	382	1,219	617	1,124	− 21.8	622	62.3
7. Manufacture of furniture and fixtures ...	3,769	711	3,249	869	4,300	14.1	912	28.3
8. Printing, publishing and allied industries ...	5,296	831	5,714	848	6,232	17.7	871	4.8
9. Manufacture of paper and paper products ...	—	—	74	32	527	—	66	—
10. Manufacture of rubber products except footwear	—	—	1,547	133	2,347	—	183	—
11. Leather products	1,685	125	668	54	668	− 60.6	54	− 57.0
12. Manufacture of chemicals and chemical products	3,501	326	8,513	361	9,740	178.2	434	33.1
13. Manufacture of non-metallic mineral products ...	9,366	855	10,009	752	8,009	− 14.5	662	− 22.5
14. Manufacture of metal products except machinery and transport equipment	1,539	301	4,027	759	4,427	187.7	829	175.4
15. Manufacture and repairs of machinery except electrical machinery	6,948	634	7,310	768	7,240	4.2	700	10.4
16. Manufacture and repairs of electrical machinery apparatus and appliances	1,340	147	1,942	294	2,842	112.0	344	134.0
17. Manufacture and repairs of transport equipment	9,980	1,590	16,199	2,445	18,199	82.4	2,545	60.1
18. Miscellaneous manufacturing industries ...	28,857	619	31,949	1,057	32,564	12.8	1,442	133.0
	126,150	11,258	160,832	16,531	199,809	58.4	18,057	60.4

Notes : (*a*) Figures refer to total number of persons engaged in December 1964
(*b*) Figures for tobacco manufacture are included under Miscellaneous Manufacturing Industries

APPENDIX V (a)

Imports

(WITH INDICATIONS OF PROSPECTS FOR LOCAL PRODUCTION)

MANUFACTURED FOODS

			Value Rs 000	
	1 Average Quantity 1965–1969	2 Quantity 1969	3 Average Value 1965–1969	4 Value 1969
1. Meat Preparations m/tons ...	393	395	1,668	1,795†
2. Dairy Products	—	—	11,518	10,932‡
3. Fish Preparation m/tons ...	1,245	939	2,811	2,177‡
4. Flour and Other Cereal Preparations m/tons	38,376	46,897	19,460	25,623‡
5. Bacon and Ham and Salted Pork m/tons	66	65	401	437‡
6. Preparation of Vegetable and Fruit m/tons	1,437	1,261	2,279	2,300‡
7. Sugar Confectionery and Other Preparations m/tons	274	220	779	713*
8. Chocolate and Chocolate Preparations m/tons	84	76	547	574‡
9. Margarine and Shortenings m/tons ...	1,051	237	2,446	580*
10. Food Preparations n.e.s. ...	—	—	579	516
11. Non Alcoholic Beverages ...	—	—	198	244*
12. Refined Oil (Vegetable) m/tons ...	9,477	7,782	14,201	9,461*
13. Alcoholic Beverages ...	—	—	3,725	3,415†

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* Production facilities, existing or under construction, with sufficient production capacity to cover all of present and medium term demand.

† Existing production facilities not sufficient to cover demand. Extension and/or diversification may be feasible.

‡ No production facilities at present. The scope of the demand may be sufficient to consider the establishment of manufacturing.

APPENDIX V(b)

Imports

(WITH INDICATIONS OF PROSPECTS FOR LOCAL PRODUCTION) MANUFACTURED CONSUMER GOODS OTHER THAN FOODSTUFFS

	Value Rs 000	
	1	*2*
	Average Value 1965–69	*Value 1969*
1. Textile fabrics (excluding fabrics considered as intermediate goods)	17,823	17,445
2. Clothing except fur clothing ...	7,297	5,827†
3. Blankets, bed linen, made up articles of textile	1,572	1,512‡
4. Footwear	2,841	1,861*
5. Travel goods, sport goods, harness makers' goods, toys, games	2,012	1,714‡
6. Mechanical electrical refrigerators ...	818	810
7. Electrothermic app., comprising stoves ...	687	684‡
8. Portable domestic electrical appliances ...	352	344
9. Television sets and parts	2,899	3,277
10. Passenger road motor vehicles (other than public service buses)	2,609	2,408
11. Motor cycles	336	242
12. Tyres and tubes	3,680	3,281
13. Ships and boats	25	61
14. Bicycles and parts	620	467
15. Phonographs, record players, records ...	592	1,001
16. Other musical instruments	145	80
17. Cinematographic projectors, sound film recorders	155	119
18. Photographic and cinematographic cameras	689	870
19. Photographic and cinematographic supplies	608	692
20. Clocks and watches	512	650
21. Furniture and fixtures	1,080	472†
22. Floor covering and tapestries (aloe fibre carpets etc.)	309	309†
23. Mirrors and looking glass	113	110*
24. Sewing Machines	510	239
25. Pottery and glassware	1,213	1,459
26. Household utensils, cutlery and other household articles of metal	2,045	1,899‡

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*Production facilities, existing or under construction, with sufficient production capacity to cover all of present and medium term demand.

†Existing production facilities not sufficient to cover demand. Extension and/or diversification may be feasible.

‡No production facilities at present. The scope of the demand may be sufficient to consider the establishment of manufacturing.

APPENDIX V (b)—*continued*

	Value Rs 000 1 *Average Value 1965–69*	 2 *Value 1969*
27. Perfumery, cosmetics, soaps, cleansing & polishing preparations	6,255	3,949*
28 Fuel & Lubricating oils, greases & polishing preparations	8,464	9,311
29. Published materials	3,100	2,828†
30. Stationery	758	716†
31. Pharmaceuticals, starches, and saccharine tablets	7,586	7,947†
32. Jewellery, gold and silver	286	235†
33. Electric batteries and bulbs	942	866*
34. Sundry goods	6,879	6,699
of which :—		
Candles	(95)	(37)
Matches	(166)	(48)
Plastic articles, baskets, brooms and brushes	(1,840)	(1,987)†
Fountain pens...	(336)	(312)

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* Production facilities, existing or under construction, with sufficient production capacity to cover all of present and medium term demand.

† Existing production facilities not sufficient to cover demand. Extension and/or diversification may be feasible.

APPENDIX V(c)

Imports

(WITH INDICATIONS OF PROSPECTS FOR LOCAL PRODUCTION)

MANUFACTURED INTERMEDIATE GOODS

	1 *Average Quantity 1965–1969*	2 *Quantity 1969*	*Value Rs. 000* 3 *Average Value 1965–1969*	4 *Value 1969*
1. Feeding stuff for animals	8,621	9,287	4,066	4,834†
2. Yeast m/ton for animal feed	42	36	190	163
3. Wood shaped or simply worked cu.m. 000	8	6	2,561	1,995‡
4. Waxes m/ton	318	519	335	514
5. Coconut (copra) oil m/ton	409	261	638	462
6. Hydrogenerated oils, fats m/ton	354	911	587	1,547
7. Coal tar dyes and natural indigo m/ton	150	140	386	414
8. Pigments, paints, varnishes and related material including prepared paint, enamels	—	—	2,704	2,058*
9. Essential oils, perfume and flavour materials	—	—	1,169	1,312
10. Fertilizers manufactured m/ton	56,625	57,174	18,261	17,100*
11. Propellant powders, fuses, detonators m/ton	26	59	115	271
12. Synthetic plastic material in primary forms m/ton ...	349	473	1,189	1,621
13. Weed killing preparations m/ton	830	864	3,428	3,007‡
14. Insecticides and pesticides m/ton	189	171	1,136	1,150‡
15. Cassein, albumen, gelatin m/ton	99	69	380	377
16. Chemical material and products n.e.s. m/ton	426	510	1,065	1,320
17. Leather m/ton	[illegible]	16	111	208†
18. Soles, uppers and other parts of shoes m/ton	34	44	172	282
19. Veneer, plywood, boards, artificial or reconstituted wood of which: ...			1,216	1,262*
Plywood 000 sq. Metres	260	279	(1,039)	(1,171)*

particle board

20.	Wood manufactures n.e.s. of which:	—	—	585	957
	Boxes, cases, crates (No.)			(343)	(696)†
21.	Cork manufactures	—	—	140	124
22.	Newsprint, printing and wrapping paper m/ton	1,243	1,332	1,706	2,088
23.	Paper board, corrugated cardboard m/ton	330	582	484	704
24.	Building board of paper, paper and paper board bituminized, coated, etc. and wall paper	689	352	626	493
25.	Cigarette paper m ton	30	27	158	142
26.	Paper bags, cardboard boxes m/ton	244	141	705	463†
27.	Paper bags for cement (No.)	1,214	948	293	257
28.	Registers and ledgers, account-order and receipt forms m/ton	62	104	318	412†
29.	Textile yarn and thread m/ton	44	34	935	786* sewing thread
30.	Cotton fabrics: grey, unbleached, sq. metres	723	500	565	430
31.	Fabrics in jute sq. metres (000)	34	24	81	62
32.	Knitted fabrics	156	610	340	1,155*
33.	Tulle, lace of silk, synthetic and other fibres	—	—	416	478
34.	Ribbons, trimmings, tapes	—	—	181	203
35.	Embroidery in the piece	—	—	306	248
36.	Special textile fabrics and related products	—	—	1,470	1,723
37.	Bags, sacks, tarpaulins, tents (No. in thousand)	—	—	175	159
38.	Linoleum and similar products sq. m. (000)	17	20	46	56
39.	Lime, cement and fabricated building material except glass and clay materials m/ton of which:	81,600	76,080	8,243	8,370
	Cement m/ton	(81,232)	(76,063)	(8,016)	(8,344)‡
40.	Clay construction materials and refactory construction materials	—	—	802	576‡
41.	Mineral manufactures, not including clay and glass m/ton of which:	1,517	1,602	1,214	1,363
	Asbestos cement pressure piping	(1,399)	(1,470)	(770)	(899)‡
42.	Manufactures of asbestos	55	82	199	215
43.	Glass and manufactures of which:	—	—	1,379	1,212
	Sheet glass unworked (sq. 000 metres)	(153)	(224)	(547)	(494)
44.	Bottles, flasks and other containers of glass (000 No.) ...	1,767	1,231	564	551

*Production facilities, existing or under construction, with sufficient production capacity to cover all of present and medium term demand.

†Existing production facilities not sufficient to cover demand. Extension and/or diversification may be feasible.

‡No production facilities at present. The scope of the demand may be sufficient to eonsider the establisbment of manufacturing.

APPENDIX V(c)—*continued*

	1 *Average Quantity 1965-1969*	2 *Quantity 1969*	*Value Rs. 000* 3 *Average Value 1965–1969*	4 *Value 1969*
45. Pig. iron and sponge iron m/ton	52	59	26	34
46. Ingots, blooms, slabs m/ton	339	700	164	370
47. Joists, girders, angles m/ton	7,798	4,729	5,071	3,658†
48. Universals, plates, sheets of iron or steel uncoated m/ton ...	916	1,042	701	815
49. Plates and sheets of iron or steel coated and tinned m/ton ...	2,278	1.732	2.178	1,798
50. Wire rods and wire, coated and uncoated m/ton	738	536	621	493
51. Steel tubes and fittings m/ton	921	558	1,163	810‡ welded tubes
52. Pipes and fittings, cast iron m/ton	1,012	921	1.182	1,112
53. Castings and forgings n.e.s. m/ton	55	104	112	107
54. Rods, sheets, pipes of brass, copper and alloys m/ton ...	47	35	361	273
55. Sheets, pipes; rods or lead, zinc and alloy m/ton	103	44	190	115
56. Solder, tin and alloys, bars and rods of non ferrous base metal n.e.s. m/ton	31	70	123	176
57. Metal doors, windows and parts m/ton	304	39	1,029	106†
58. Wire cables and ropes m/ton	96	128	228	251
59. Wire netting, wire fencing etc. of iron and steel m/ton ...	173	148	315	310

60. Nails, bolts, washers, rivets, screws of iron & steel m/ton	303	160	563	390†
61. Nails, bolts, washers, rivets, screws of copper, brass, aluminium and other base metals	11	10	117	107
62. Hand tools m/ton	91	82	881	869‡
63. Hardware (padlocks, fittings etc.) m/ton	156	111	1,092	871†
64. Metal containers, drums m/ton	124	252	483	852‡
65. Capsules for bottles and crown corks (No)	50,938	51,507	538	623*
66. Electrical appliances for motor cars, cycles, tractors, aircraft and explosion motors m/ton	43	39	690	610
67. Insulated wires and cables for electricity m/ton	315	117	1,673	756
68. Storage batteries and accumulators	3	1	212	133*
69. Central heating apparatus, sinks, wash basins and fittings m/ ton	255	201	927	757‡
70. Lighting fixtures m/ ton	57	36	605	458‡
71. Commercial propaganda material	—	—	128	176†
72. Calendars and blocks for calendars, printed cards etc ...	—	—	532	432†

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* Production facilities, existing under construction, with sufficient production capacity to cover all of present and medium term demand.

† Existing production facilities not sufficient to cover demand. Extension and / or diversification may be feasible.

‡ No production facilities at present. The scope of the demand may be sufficient to consider the establishment of manufacturing.

APPENDIX V(d)

Imports

(WITH INDICATIONS OF PROSPECTS FOR LOCAL PRODUCTION)

CAPITAL GOODS

	Value Rs. 000	
	1 Average Value 1965–1969	2 Value 1969
1. Safes, strong room fittings	67	110
2. Steam generating boilers, boiler house plants and parts	878	500†
3. Steam engines, stationary and marine, steam tractors, locomobiles, parts	299	261
4. Internal combustion engines, diesel and semi-diesel	784	915
5. Engines n e.s. e.g. wind engines, hot air engines, water and gas turbines	207	866
6. Agricultural machinery and implements ...	1,128	1,573‡
7. Tractors, other than steam	2,292	2,348
8. Office machinery	1,377	2,129
9. Metal working machinery	476	671
10. Mining, construction and other industrial machinery of which :—	10,149	9,086
Pumps for liquids for manufacturing industry and agricultural production, and parts	767	712‡
Industrial trucks and parts ...	61	17
Bulldozers and parts	222	13
Mobile cranes and spare parts ...	84	50
Conveying, hoisting, road construction and mining machinery	1,005	738
Wood working machinery ...	75	154
Pneumatic tools	114	212
Printing type and printing plates ...	137	122
Textile machinery and accessories ...	70	152
Printing and book binding machinery	503	772
Sewing machinery, industrial ...	84	159
Refrigerating equipment, industrial ...	328	74
Air conditioning and refrigerating equipment	573	329
Machinery and appliances n.e.s. ...	2,928	2,899
Ball, needle and roller bearings ...	570	461
Machinery parts and accessories n.e.s. except electric	2,682	2,222

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* Production facilities, existing or under construction, with sufficient production capacity to cover all of present and medium term demand.

† Existing production facilities not sufficient to cover demand. Extension and/or diversification may be feasible.

‡ No production facilities at present. The scope of the demand may be sufficient to consider the establishment of manufacturing.

APPENDIX V (d)—*continued*

	Value Rs. 000	
	1 *Average value 1965–60*	*2* *Value 1969*
11. Electric generators, converters, transformers and parts	1,552	1,808
12. Electric batteries n.e.s.	171	216
13. Apparatus for telegraphy and telephony	575	687
14. Electrothermic apparatus, other and parts	386	428
15. Apparatus for measuring and controlling electric energy, for signalling and safety apparatus and parts	383	259
16. Electric apparatus for medical purposes and radiological apparatus	156	106
17. Portable electric tools and appliances ...	201	193
18 Other electrical machinery n.e.s. ...	3,272	3,034
19. Railway and tramway vehicles and parts	78	54
20. Buses for use as public service vehicles, trucks, lorries and road motor vehicles, complete	1,203	515
21. Chassis with engines mounted for trucks, buses, lorries and road motor vehicles	1,586	1,768
22. Bodies, chassis, frames and other parts for road motor vehicles other than motorcycles and tractors	3,371	2,935†
23. Road vehicles n.e.s. including trailers of iron and steel	118	74†
24. Optical instruments and appliances ...	241	270
25. Surgical, medical, dental instruments and appliances	226	168
26. Measuring, controlling and scientific instruments and parts	857	1,003

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† Existing production facilities not sufficient to cover demand. Extension and/or diversification may be feasible.

APPENDIX VI

Value of Annual Imports of Selected Items to Potential Regional Markets mainly in the Indian Ocean Region

(Based on latest available UN Statistics)—000 U.S. $ Dollars.

SITC	*Commodity*	*Japan*	*Australia*	*S/Africa**
541.1	Vitamins	8,163	2,274	50
541.3	Antibiotics	21,296	5,967	315
541,7	Medicaments	80,503	28,418	1,729
541.9	Pharmaceutical goods	4,718	3,320	731
599.2	Insecticides, fungicides, disinfectants	10,175	6,673	6,057
714.1	Typewriters	10,040	10,164	3,656
714.2	Calculating and Accounting Machines	49,477	30,768	9,255
714.3	Statistical Machines	23,410	9,250	6,972
714.9	Office Machines (n.es.)	95,935	1,002	6,494
710.12	Air-Conditioning Machines	17,056	1,559	—
724.1	Television Receivers	8,106	437	2
724.2	Radio Receivers	140	4,179	11,797
724.9	Telecommunications Equipment (n.e.s.)	34,142	55,941	25,629
891.1	Gramophones, tape recorders and other sound recorders and reproducers	11,310	11,873	38
725.01	Domestic Elect. Refrigerators	1,222	5,236	—
725.02	Domestic Washing Machines	113	1,222	—
725.03	Domestic Elect. Equipment (n.e.s.)	793	4,962	—
725.04	Electrical Shavers, Clippers	1,693	786	—
725.05	Elect. Space Heaters	2,068	2,536	—
861.1	Optical Elements	3,525	3,162	636
861.2	Spectacles and Spectacle Frames	2,466	2,426	2,026
861.3	Binoculars, microscopes and other optical instruments	1,115	3,584	1,070
861.4	Photographic cameras and flashlight app.	2,661	6,865	—
861.5	Cinematographic cameras and projectors	1,480	3,923	—
861.7	Medical Instruments (n.e.s.)	5,806	6,143	318
861.9	Measuring, controlling and scientific instruments	40,205	33,022	17,520
864.1	Watches and movements	13,953	7,515	—
864.2	Clocks and parts	9,499	8,213	2,241
553	Perfumery and Cosmetics and other toilet preparations	3,509	4,116	785
062.0	Sugar confectionery	1,199	1,416	—
862.4	Photographic films, plates, papers	26,740	1,016	7,917
		492,518	267,968	105,238

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* Figures are for the year 1965.

APPENDIX VI—*continued*

SITC	*Commodity*	**Iran*	*Singapore*	*†India*
541.1	Vitamins	—	556	2,208
541.3	Antibiotics	11,908	432	2,403
541.7	Medicaments	29,169	12,154	12,430
541.9	Pharmaceutical goods	272	1,049	207
599.2	Insecticides, fungicides, disinfectants	5,300	2,784	10,929
714.1	Typewriters	967	2,068	—
714.2	Calculating and Accounting Machines	2,796	2,163	1,862
714.3	Statistical Machines	—	813	2,114
714.9	Office machines (n. e. s.)	615	628	2,433
719.12	Air-conditioning machines	—	3,557	—
724.1	Television receivers	12	2,066	412
724.2	Radio receivers	778	8,267	2,205
724.9	Telecommunications Equipment (n. e. s.)	10,696	5,942	17,994
891.1	Gramophones, tape recorders and other sound recorders and reproducers	2,392	6,858	253
725.01	Domestic Elect. Refrigerators	2,369	1,123	—
725.02	Domestic Washing Machines	963	292	—
725.03	Domestic Elect. Equipment (n. e. s.)	4,588	2,030	—
725.05	Elect. Space heaters	1,271	1,928	—
725.04	Electrical Shavers, Clippers	536	217	—
861.1	Optical elements	103	781	—
861.2	Spectacles and Spectacle frames	235	1,067	—
861.3	Binoculars, microscopes and other optical instruments	258	—	1,269
861.4	Photographic cameras and flashlight app.	212	3,560	119
861.5	Cinematographic cameras and projectors	377	677	595
861.7	Medical instruments (n.e.s.)	3,358	771	1,150
861.9	Measuring, controlling and scientific instruments	8,067	4,447	9,096
864.1	Watches and movements	1,600	18,813	—
864.2	Clocks and parts	762	—	539
553	Perfumery and cosmetics and other toilet preparations	383	1,689	—
062.0	Sugar confectionery	—	2,230	—
862.4	Photographic films, plates, papers	3,550	1,016	7,875
		93,537	89,978	76,093

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* Figures are for the year 1967.

† Figures are for the year 1966.

APPENDIX VI—*continued*

Commodity	*N/Zealand*	*Malaya**	*Pakistan†*
Vitamins	350	178	690
Antibiotics	784	318	1,263
Medicaments	15,951	10 856	13,268
Pharmaceutical goods	1,349	801	894
Insecticides, fungicides, disinfectants	4,056	6,052	14,286
Typewriters	1,339	940	1,658
Calculating and accounting machines	2,218	1,395	813
Statistical machines (n.e.s.)	2,394	960	205
Office machines (n.e.s.)	1,629	728	510
Air-conditioning machines	--	1,204	—
Television receivers	310	2,882	2,837
Radio receivers	614	4,953	1,793
Telecommunication equipment (n.e.s.)	10,562	4,953	5,993
Gramophones, tape recorders and other sound recorders and reproducers	1,235	1,932	347
Domestic Elect. refrigerators	160	2,283	120
Domestic Washing machines	145	126	—
Domestic Elect. equipment (n.e.s.)	699	1,732	—
Electrical shavers, clippers	133	—	—
Elect. space heaters	306	1,196	—
Optical elements	623	—	202
Spectacles and Spectacle frames	568	148	—
Binoculars, microscopes and other optical instruments	738	235	490
Photographic cameras and flashlight app.	1,637	345	101
Cinematographic cameras and projectors	420	345	248
Medical instruments (n.e.s.)	2,072	775	1,006
Measuring, controlling and scientific instruments	5,570	2,598	5,873
Watches and movements	2,462	859	—
Clocks and parts	1,894	542	256
Perfumery and cosmetics and other toilet preparations	208	3,475	—
Sugar confectionery	—	750	—
Photographic films, plates, papers	4,755	1,678	1,769
	65,181	55,239	54,622

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* Figures are for the year 1967.

APPENDIX VI—*continued*

Commodity	‡ *Zambia*	† *Mada-gascar*	* *Ceylon*
Vitamins	—	8	—
Antibiotics	149	5	114
Medicaments	2,939	4,196	2,213
Pharmaceutical goods	821	115	2,209
Insecticides, fungicides, disinfectants	1,384	419	2,092
Typewriters	205	249	211
Calculating and accounting machines	579	318	—
Statistical machines	1,201	547	—
Office machines (n.e.s.)	214	78	145
Air Conditioning machines	—	452	200
Television receivers	—	148	—
Radio receivers	—	179	403
Telecommunication equipment (n.e.s.)	3,410	—	784
Gramophones, tape recorders and other sound recorders and reproducers	456	—	—
Domestic Elect. Refrigerators	707	748	—
Domestic Washing Machines	—	219	—
Domestic Elect. Equipment (n.e.s.)	419	132	211
Elect. shavers, Clippers	—	5	—
Elect. space heaters	973	183	146
Optical elements	—	23	—
Spectacles and Spectacle frames	143	161	—
Binoculars, microscopes and other optical instruments...	197	41	—
Photographic cameras and flashlight app.	—	67	—
Cinematographic cameras and projectors	—	154	179
Medical instruments (n.e.s)	—	255	—
Measuring, controlling and scientific instruments ...	1,394	695	599
Watches and movements	—	434	—
Clocks and parts	—	55	—
Perfumery and cosmetics and other toilet preparations...	—	287	—
Sugar confectionery	—	726	—
Photographic films, plates, papers	—	155	482
	15,175	11,054	9,988

* Figures are for the year 1967
† Figures are for the year 1966
‡ Figures are for the year 1969

APPENDIX VI—*continued*

Commodity	**U.A.R.*	**Thailand*	**Kenya*	†*Sudan*
Vitamins	1,693	2,027	94	76
Antibiotics	2,293	2,906	174	215
Medicaments	11,953	5,515	3,653	5,107
Pharmaceutical goods	206	908	369	366
Insecticides, fungicides, disinfectants ...	15,396	4,185	2,416	5,141
Typewriters	524	1,003	340	63
Calculating and Accounting Machines ...	473	1,954	996	107
Statistical machines	685	261	203	29
Office machines (n. e. s.)	267	407	274	83
Air-conditioning machines ...	425	3,924	—	—
Television receivers	1,071	2,379	213	347
Radio receivers	262	1,582	805	1,376
Telecommunication equipment (n. e. s.)	13,881	3,143	3,562	1,011
Gramophones, tape recorders and other sound recorders and reproducers	429	720	822	86
Domestic Elect. Refrigerators ...	247	1,685	—	210
Domestic washing machines ...	176	—	—	—
Domestic Elect. Equipment (n.e.s.) ...	181	1,542	—	—
Electrical shavers, clippers ...	—	—	—	—
Elect. space heaters	181	1,111	—	—
Optical elements	15	—	4	15
Spectacles and Spectacle frames ...	81	412	38	129
Binoculars, microscopes and other optical instruments	500	178	106	40
Photographic cameras and flashlight app.	19	249	599	49
Cinematographic cameras and projectors	—	147	79	22
Medical instruments (n.e.s.) ...	—	1,027	396	172
Measuring, controlling and scientific instruments	1,510	5,686	1,271	549
Watches and movements	476	315	144	206
Clocks and parts	111	970	96	6
Perfumery and cosmetics and other toilet preparations	165	2,129	474	545
Sugar confectionery	—	—	424	9
Photographic films, plates and papers ...	1,207	1,578	1,151	262
	54,427	47,943	18,703	16,221

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*Figures are for the year 1967
†Figures are for the year 1966

APPENDIX VI—*continued*

Commodity	*Tanganyika**	*Uganda*	*Reunion*†
Vitamins	69	49	3,286
Antibiotics	275	187	—
Medicaments	2,017	1,678	—
Pharmaceutical goods	393	171	—
Insecticides, fungicides, disinfectants	—	446	279
Typewriters	—	108	227
Calculating and Accounting machines	294	344	123
Statistical machines	49	37	—
Office machines (n.e.s.)	102	101	263
Air conditioning machines	—	—	47
Television receivers	4	124	557
Radio receivers	1,188	1,060	211
Telecommunications Equipment (n.e.s.)	1,610	875	—
Gramophones, tape recorders and other sound recorders and reproducers	413	419	—
Domestic Elect. Refrigerators	—	—	203
Domestic Washing machines	—	—	102
Domestic Elect. equipment (n.e.s.)	—	—	—
Electrical shavers, clippers	—	—	—
Elect. space heaters	—	—	—
Optical elements	5	20	2
Spectacles and Spectacle frames	34	26	39
Binoculars, microscopes and other optical instruments	48	35	49
Photographic cameras and flashlight app. ...	250	187	55
Cinematographic cameras and projectors	84	—	—
Medical instruments (n.e.s.)	—	316	411
Measuring, controlling and scientific instruments ...	522	482	70
Watches and movements	89	69	67
Clocks and parts	106	61	37
Perfumery and cosmetics and other toilet preparations	—	302	521
Sugar confectionery	336	169	—
Photographic films, plates, papers	401	386	—
	8,289	7,652	6,549

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* Figures are for the year 1967.

† Figures are for the year 1966.

APPENDIX VI—*continued*

Commodity	*Malawi**	*Mauritius*	*Somalia**	*Total*
Vitamins	—	34	3	22,808
Antibiotics	8	124	24	[illegible]
Medicaments	763	—	4	244,500
Pharmaceutical goods	159	—	903	19,961
Insecticides, fungicides, disinfectants	278	253	70	98,671
Typewriters	50	32	166	34,010
Calculating and accounting machines ...	53	122	23	106,133
Statistical machines	75		37	49,242
Office machines (n.e.s.)	53	—	7	[illegible]
Air conditioning machines ...	—	108		[illegible]
Television receivers	—	383	—	[illegible]
Radio receivers	566	306	151	[illegible]
Telecommunication equipment (n.e.s.) ...	968	162	154	[illegible]
Gramophones, tape recorders and other sound recorders and reproducers ...	86	11	23	[illegible]
Domestic Elect. refrigerators ...		120		[illegible]
Domestic washing machines ...		63		[illegible]
Domestic Elect. Equipment (n.e.s.) ...		153		[illegible]
Electrical shavers, clippers ...				[illegible]
Elect. space heaters				[illegible]
Optical elements	1			[illegible]
Spectacles and spectacle frames ...	46		8	[illegible]
Binoculars, microscopes and other optical instruments	13		25	9,995
Photographic cameras and flashlight app.		47	1	17,623
Cinematographic cameras and projectors	29	15	6	[illegible]
Medical instruments (n. e. s.) ...	136	118	24	[illegible]
Measuring, controlling and scientific instruments	210	160	117	[illegible]
Watches and movements	71	75		47,148
Clocks and parts	15	56		[illegible]
Perfumery and cosmetics and other toilet preparations ...	222	255	93	[illegible]
Sugar confectionery	100	157	99	[illegible]
Photographic films, plates, papers ...	53			[illegible]
	3,955	2,758	1,938	1,505,026

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*Figures are for the year 1966

†Figures are for the year 1969

CHAPTER XIV

COMMERCE, BANKING AND CREDIT INSTITUTIONS

A. Foreign Trade

With the limited domestic market, the future development of Mauritius is significantly linked to the development of its external trade. The overall management of the external sector is therefore vital to the success of the development plan.

2. At present, sugar alone accounts for more than 93 per cent of the exports. Even small fluctuations in the size of the crop or in prices affect the balance of trade significantly. The remaining exports are made up mainly of molasses and tea. Exports of other agricultural produce such as fresh fruits and flowers and ginger are small but increasing. Exports of manufactures other than sugar, molasses and tea amounted in 1969 to about Rs 6 million as against an annual average of Rs 2.7 million during 1965-1968. Aloe fibre bags account for about half of the export of manufactures.

EXPORTS BY PRINCIPAL COUNTRIES OF DESTINATION, 1965–1969

Rs million

	1965	*1966*	*1967*	*1968*	*1969*
United Kingdom ...	245.5	275.7	269.2	272.2	260.5
Canada	28.0	30.9	9.5	44.1	63.2
Republic of South Africa	11.8	1.3	3.4	6.9	9.5
New Zealand ...	0.5	0.2	0.1	0.3	0.3
Holland	0.6	0.3	2.8	0.3	0.5
Italy	0.3	—	0.4	0.9	0.1
Republic of Malagasy ...	0.9	1.1	1.7	1.9	2.4
Reunion	1.6	2.9	1.3	2.5	3.3
United States of America	14.1	16.4	15.8	21.6	18.4
Other Countries ...	10.1	8.8	2.6	3.3	7.1
TOTAL ...	313.4	337.6	306.8	354.0	365.2

3. The destination of exports is almost entirely determined by various international agreements for the sale of sugar. Increasing quantities of tea have in recent years been sold to South Africa and some of the new

manufactures are finding markets in Reunion and Madagascar. Although industrial policy is largely based on attracting foreign investors with established international markets, the search for new markets and negotiations on bilateral and multilateral basis both for attracting industries and finding markets, will form an important aspect of Government's economic policy. The Foreign Trade department of the Ministry of Commerce and Industry will be adequately strengthened.

4. Mauritius depends entirely on imports for its staple foods, rice, wheat flour and vegetable oils. The demand for other foodstuffs is met partly by local production. Of the annual average total consumption of food during the period 1965 to 1969 of about Rs 196 million, imports accounted for 63 per cent on average. Of the total annual consumption of manufactures, including food and petroleum products, of about Rs 475 million (c.i.f. or ex-factory value) imports account for about 60 per cent. The import component of the main industrial groups for 1970 is estimated as follows:

	Share of Imports in Total Consumption %
Food processing (excluding beverages and sugar) ...	64
Beverages	12
Textile fabrics and yarns (excluding aloe fibre and sack industry)	100
Footwear, clothing and made up textile articles ..	42
Manufactures of wood, including furniture and fixtures	48
Paper and paper products (incl. printing and publishing)	60
Rubber products (principal item, tyres)	71
Chemical products (including fertilizers) ...	81
Petroleum products	100
Mineral products (non-metallic, including cement) ...	62
Metal manufactures (excluding machinery and transport equipment)	82
Machinery, non-electric	65
Machinery, electric	86
Transport equipment	43
Miscellaneous manufactures (incl. tobacco manufactures)	31

5. The reliance on imports, although total in some commodity groups, is far from excessive considering the smallness of the Mauritian market. As for some capital goods, the proportion manufactured locally is unusual for a developing country at the present stage of Mauritius' development. The development of import substitution industries will further reduce dependence on imports. The dependence on imports of food and other consumer goods is expected to decline from the present 57 per cent to 45 per cent by 1975.

6. The imported share of the groups " Manufactures of Wood " and " Chemical Products " by 1975 is likely to decrease to about 35 per cent and 50 per cent respectively with the coming into operation of the plants for particle board and chemical fertilizers, now under construction. The establishment of a cement plant now under consideration, would reduce the import component of the group " Mineral Products; non-metalic " to about 25 per cent.

7. Imports by major categories and by origin are shown in the following tables:

IMPORTS 1965–1969, MAJOR CATEGORIES

Rs Million

	1965	*1966*	*1967*	*1968*	*1969*
Food	108.0	109.6	118.5	135.5	132.7
Beverages & Tobacco ...	6.8	4.9	4.8	5.7	5.3
Crude materials, inedible, except fuels	6.7	5.4	7.1	7.8	5.7
Mineral fuels, lubricants etc. ...	17.7	15.4	25.4	35.9	31.7
Animal and vegetable oils and fats	14.9	17.7	18.3	18.5	12.5
Chemicals	47.1	45.6	42.6	49.0	43.0
Manufactured goods, classified by material	109.6	97.6	110.6	112.2	72.4
Machinery & Transport equipment	56.3	36.9	43.7	56.5	44.7
TOTAL ...	367.0	333.0	371.0	421.0	376.0

IMPORTS ACCORDING TO COUNTRY OF ORIGIN

		1967	*1968* *(Rs Million)*	*1969*
Total Imports	...	371.1	421.1	376.0
Australia ...	...	28.0	25.7	27.1
Burma ...	...	27.0	42.3	7.7
France ...	...	20.3	23.8	24.8
Germany (Western)	...	25.9	27.9	17.1
Hong Kong	...	10.4	8.7	8.8
India ...	...	9.4	11.5	10.2
Iran ...	...	17.8	12.6	20.0
Japan ...	...	16.8	14.3	14.6
Republic of South Africa		30.6	31.4	31.3
Thailand ...	...	16.1	10.7	43.8
U.S. of America	...	7.3	8.8	6.0
United Kingdom	...	77.8	99.6	74.4
Others ...	...	83.6	103.7	90.2

8. The present composition of imports by major categories: food, other consumer goods, intermediate goods and capital goods is 35 per cent, 22 per cent, 25 per cent and 18 per cent respectively. This composition as well as the scope of foreign trade is expected to change radically with the progress in planned development. These developments are expected to result in the following pattern of trade by 1975.

	Rs million			
Imports	*1969*	*% of total imports*	*1975*	*% of total imports*
Food	131	57	276	45
Other consumer goods ...	82			
Intermediate goods ...	91	25	147	24
Capital goods	65	18	192	31
	366*	100	615	100
Exports	*365*		*465*	
Of which processed agricultural produce, including sugar and tea ...	98%		83%	
Other manufactures ...	2%		17%	

9. The geographical distribution of trade will also change significantly according to the market orientation outlined in the chapter on "Manufacturing and Related Activities". Government will also endeavour to enter into bilateral negociations for investment in industries in Mauritius by industrial countries and for export to those countries which have a persistent favourable balance of trade with Mauritius. Such negociations may help securing investment as well as markets.

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* Total imports reduced by value of gas oil and diesel oil supplied to ships.

B. Internal Trade

Available information on this sector is insufficient and incomplete to permit an analysis of recent trends or an evaluation of the present situation.

10. The trade sector, however, has traditionally played a major role in the economic life of Mauritius, particularly in meeting most of the needs of the population through the continuous supply of imports. The trade has served the market adequately and has helped to keep increases in prices at reasonable levels.

11. The emphasis since the beginning of the 1960's on the promotion of import replacement industries has reduced the total market available to the wholesale trade by some Rs 75 million. Only in exceptional cases have long established wholesale distribution facilities for imported commodities been used for new local production. Apart from the loss of markets—for some commodities now produced locally, no more than 20 per cent of the market is left to the traders other serious difficulties have lately occurred, such as repeated increases in freight rates. Furthermore, the activities of the traders are conducted in a heavily competitive environment.

12. The wholesale and retail trade contributed in 1969 Rs 90 million or about 10.3 per cent to Gross Domestic Product at factor cost. The relative importance of this contribution becomes clear when compared to the contribution of Manufacturing, including sugar factories, which in 1969 was Rs 142 million.

13. The contribution to the GNP of Rs 90 million is broken down as follows:

	Rs Million
Wholesale imported goods	23
Retail imported goods	24
SUB-TOTAL ...	47
Wholesale and retail locally produced goods ...	34
Brokerage, sugar	8
Brokerage, other	1
SUB-TOTAL ...	43
TOTAL ...	90

14. The number of licensed shops in June 1969 and 1970 was as follows:—

	General Retailers	*Tobacconists*	*Groceries*	*Draperies Haberdasheries*	*Total*
June 1969 ...	3,442	1,462	184	135	5,223
June 1970 ...	3,326	1,431	173	125	5,055

Turnover of stocks, profitably etc. are not known at present. The number of shops appears to be excessive in relation to the size of the market. Many retailers operate under less than ideal economic conditions.

C. Policies and Programmes

15. In view of the lack of information in the internal trade sector and its importance to the economy, Government proposes to undertake a comprehensive Census of Distribution. This will enable government to define policies and programme, including the likely need of introducing more strict controls on the registration and qualifications required for various types of trading establishments.

16. Pending the findings of the census, the principal elements of policy in this sector can only be tentatively indicated. First, the overall criterion of maximization of the creation of productive employment must be applied in this sector also. In the recent intensive promotion of industry the fact that trade activities are generally labour intensive has been somewhat overlooked. Secondly the policy must aim at maximum possible integration of existing and future trade activities and new industrial establishments. This is consistent with the policy defined for manufacturing.

17. These principal elements of policy are in particular relevant to activities connected with the anticipated development of foreign trade operations. Trading organizations can offer services which may be of considerable interest to industrial establishments: such as carrying stocks of and providing services for industrial ancillary materials and equipment. The fact that such industrial services are already available constitutes an incentive to industrial promoters. The trade can also carry stocks of raw materials for industry. Due to the lack of local raw materials and the long distances and time involved in transportation from sources of imported supplies, industries may require unusually heavy amounts for raw material inventories. Some industries may find it in their interest to leave this investment and risk to local trading organizations. This will not necessarily lead to increased costs of the industry. The trader is generally better organised than the industry for the difficult function of continuously surveying world supplies and prices and of buying when and where it is most profitable.

18. The trading organizations can also offer services in export and/or in the management of exports from industries with established markets. This can reduce significantly the investment and costs of an industrial promotor as he would not have to establish a local export sales and shipping department, from which otherwise he may have to employ expensive foreign management staff. With a view to the potential importance of such industrial services both for the trading organizations and for prospective industrial establishments, a survey will be made in order to establish a register of trading organizations who are able and willing to undertake such functions.

19. There are also prospects for the training organisations, to develop marketing and distribution of commodities in the Indian Ocean Region. This may take the form of entrepôt or transit trade, with or without processing or manipulation in Mauritius. Although a system of bonded warehouses exists, a pre-requisite for large scale operations of this type is the establishment of free zone (s), as the Export Processing Zone system is designed exclusively for manufacturing. The advantages in this respect of free zones, the feasibility of which is being studied by the Government, are outlined in the chapter on " Manufacturing and Related Activities ".

20. As may appear from the above and from considerations in the corresponding sections of Chapter XIII it will sometimes be difficult to draw a clear demarcation line between trading and manufacturing activities. This means that some trading activities, particularly those connected with large scale foreign trade operations, may qualify for some incentives, to the extent that they fulfill requirements formulated in relation to industry, notably the creation of productive employment, directly or indirectly. A system of incentives suited to trading activities of this type will be considered in the study of the feasibility of free zones mentioned above. Pending the findings of this study, an inventory of capable and interested traders will be established on the basis of which integration of their activities with new industrial establishments could be looked into.

D. Banking and Credit Institutions

(i) COMMERCIAL BANKING

21. There are five commercial banks operating in Mauritius:

Barclays Bank D.C.O.
Mercantile Bank (a subsidiary of the Hong Kong and Shanghai Banking Corporation)
Bank of Baroda
Habib Bank and
Mauritius Commercial Bank.

22. The first four of these are branches of overseas banks and the Mauritius Commercial Bank, which is owned and incorporated in Mauritius, is linked with Lloyds Bank of the United Kingdom. Banking business is also transacted by the Mauritius Co-operative Central Bank. The commercial banks have a total of 32 branches on the Island, 35 mobile banking units and two airport counters.

23. The total money supply with the public at the end of 1969 was Rs 220 million; of which currency in circulation was Rs 100 million and demand deposits Rs 120 million. Total bank deposits amounted to Rs 240 million.

24. Bank credit usually reaches a peak around July—August, at the beginning of the cane harvest, and declines to a trough around December, when the bulk of the receipts from sugar exports are received. Commer-

cial bank lending to the private sector has stood at around Rs 200 million in the middle of the year in recent years.

25. The credit institutions in the public sector are the Development Bank of Mauritius and the Mauritius Co-operative Central Bank. There is also a Post Office Savings Bank with 90,000 accounts and deposits of Rs 25 million to Rs 30 million.

(ii) DEVELOPMENT BANK OF MAURITIUS

(a) *Capital Structure and Loan and Investment Portfolio*

26. The Development Bank of Mauritius was set up in March 1964, taking over from the Mauritius Agricultural Bank. On take-over on 1st March 1964, the assets of the Development Bank stood at Rs 31.6 million, of which the loan portfolio accounted for Rs 26.1 million. Loan capital amounted to Rs 25.4 million and reserves (including sinking fund) to Rs 5.9 million.

27. Up to June 1970 the Development Bank had received a further Rs 22.5 million in government loans at 2½ per cent interest repayable over forty years for financing " industrial " development. Apart from manufacturing industries, these loans were available for financing hotels, shipping, fishing and agricultural and livestock enterprises other than sugarcane cultivation. Reserves had in the meantime increased to Rs 9.6 million, bringing total liabilities to Rs 57.6 million. The loan portfolio plus industrial investments on 30th June 1970 stood at Rs 44 million.

28. Sugarcane loans had been run down by Rs 4.5 million to Rs 18 million. New loan approvals have recently been at a rate of Rs 1.1 million a year while repayments have been about Rs 1.8 million a year. Loans are mostly for replanting cane and are usually at a rate of up to Rs 1,000 per Arpent, repayable over fifteen years. The rate of interest is 7½ per cent a year.

29. Of the Rs 18 million outstanding on 30th June, 1970, half had been lent to six sugar estates. A further 20 per cent was on loan to six sugar estates and 22 large planters in amounts exceeding Rs 20,000. The remaining 30 per cent was in smaller loans to some 400 planters.

30. Tea loans had increased between 1964 and 1970 by Rs 2 million to Rs 3.4 million. These are loans to fourteen " project planters ".

31. There is a grace period of eight years and provision for the capitalisation of interest at a simple rate over this period. Repayments are made over the next 25 years. Interest is at 7½ per cent p.a.

32. The rest of the Development Bank's loan portfolio, the so called " industrial loans ", had increased between 1964 and 1970 by Rs 15.4 million to Rs 16.4 million. In addition the Bank had invested Rs 3½ million in equity holdings and constructed buildings for rent manufacturing enterprises at a cost of Rs 1½ million, and leased machinery to a value of Rs 0.6 million.

33. The 86 " industrial loans " are repayable over ten to fifteen years and carry a rate of interest of 6½ per cent. In addition 20 loans have been made on behalf of the Ministry of Education to smallscale enterprises up to a maximum of Rs 5,000 carrying a rate of interest of 4½ per cent p.a.

(b) *Policies*

34. With the emphasis in the plan on the development of manufacturing for export connected with large scale foreign trade operations, the scope and orientation of the activities of the Bank will change. As part of the system of incentives established for the Export Processing Zone in November 1970 the Bank will give priority, whenever possible, to export enterprises in the allocation of investment capital. In accordance with this policy the Bank will make available local financial resources also to foreign investors to an extent and on terms conditioned by the merits of each project. The project evaluation system applied by the Bank will be used to measure not only economic and commercial feasibility and financial structure, including the proportion of the total long term capital contributed by the foreign investor himself, but also consistency with the national objectives for economic development.

35. The provision of industrial buildings at economic rates or the granting of loans for up to 50 per cent of the total value of such buildings is part of the system of incentives established for export enterprises. In accordance with this policy, and in continuation of the present organization for existing industrial zones, the Bank, or a separate organization controlled by the Bank, will administer the additional industrial zones now being planned.

36. In order to facilitate the task of the prospective investor as much as possible, the Banks' requirements concerning the submission of applications and information will be co-ordinated with those of other Government agencies concerned, notably the Ministry of Commerce and Industry.

APPENDIX

Loans and Industrial Investments—30th June, 1970

	Number of Loans		*Rs Thousand*
Sugarcane	...	...	18,582
Tea cultivation	(14)		
Farming & Livestock :			
Poultry (loans)	(6)	621	
Poultry (equity)	(1)	30	
Cattle	(4)	337	
General farming	(4)	603	
			1,591
			23,609
Tea Factories	(3)		372
Food Manufacturing* :			
Loans	(14)	3,479	
Equity	(1)	250	3,729
Other Manufacturing :			
Large scale loans	(36)	4,100	
Equity	(2)	2,010	
Small scale loans	(20)	82	
Buildings for rent	(8)	1,585	
Machinery on lease	(4)	573	
			8,350
Hotels :			
Loans	(2)	2,122	
Equity	(1)	1,214	
			3,336
Shipping	(1)		1,440
Fishing	(4)		345
Compost :			
Equity	(1)	11	
Loan	(1)	169	
			180
Pre-1964 Industrial Loans	(9)		437
Cyclone loans	...		728
			42,526

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*mostly based on Imported Foodstuffs

CHAPTER XV

TOURISM AND SIMILAR INVISIBLE EARNINGS

A. Tourism

(i) Tourist and Other Visitors

The number of foreigners and citizens of other Commonwealth countries visiting Mauritius has increased sharply in the three years since Independence from 15,000 a year in 1967 and 1968 to over 20,000 in 1969 and 28,000 in 1970. Gross expenditure by visitors, including non-resident Mauritians (other than ships' crews), in 1970 is estimated at around Rs 25 million.

2. From the point of view of expenditure patterns, visitors to Mauritius may be divided into three broad classes:

(a) visitors from Africa and more distant continents,

(b) French visitors from the neighbouring island of Reunion, and to a lesser extent Frenchmen stationed or resident in Madagascar, who make up more than half the total number of foreign and Commonwealth visitors, and

(c) Mauritians settled abroad visiting relatives and friends, who account for 10 per cent of total expenditure by visitors.

3. The number of foreign visitors, other than French visitors from the Indian Ocean region, coming to Mauritius for tourism, on business or on official visits has increased dramatically from 2,000 to 3,000 a year in the early sixties to 10,000 in 1969 and 12,000 in 1970. The average length of stay of these visitors is ten days. Half of the visitors from Europe are in Mauritius on business or official visits. Expenditure on hotel bills and other accommodation charges is Rs 60 per guest-night on average; expenditure on goods outside hotels and boarding houses by non-French visitors would appear to be only Rs 125 per visitor on average.

4. For French visitors from the Indian Ocean region, the main attraction of a holiday in Mauritius is its low cost. The average length of stay is 15 days. Average expenditure is around Rs 700 per visitor, of which half is on accommodation (to a large extent the rental of beach bungalows) and half on current supplies and " shopping ", mostly on goods which are substantially cheaper, and where the value added locally is therefore less, in Mauritius than in Reunion.

5. 45,000 foreign seamen spent an average of four days in Port Louis in 1969. Advances to the crews of foreign ships calling at Port Louis exceeded Rs 5 million in 1970. 90 per cent of this amount is believed to have been spent in Mauritius.

(ii) THE HOTEL INDUSTRY AND RELATED ENTERPRISES

6. The hotel industry consisted, in 1970, of 23 hotels and boarding houses and two sets of bungalows attached to catering facilities with a total of 500 rooms and 900 beds. Most of these hotels and bungalows are on the beach with, in 1970, only one 50-room hotel at Curepipe, in the centre of the Island, and three small hotels with 36 rooms between them in Port Louis. Four hotels and one extension to an existing hotel will add 250 rooms to the present capacity by May 1972.

7. The room occupancy rate of the principal hotel chain was 60 per cent in 1970 and is well above this figure in 1971. There are seasonal peaks in August—September and December—February, but the difference in room occupancy rates between the high and low seasons is not marked.

8. Total hotel sales in 1969/70 were around Rs 10 million. For the principal hotel chain, around 40 per cent of sales are accommodation charges, 35 per cent are made in the dining room (excluding airline catering) and 20 per cent in the bar. Half the gross takings of the industry are spent on purchased supplies and services. The import component of these supplies and services is around 35 per cent and the indirect tax element, one eighth.

9. Value added in the hotel industry would therefore appear to be Rs 6 million a year. The industry employs a labour force of 630. Labour productivity is thus Rs 9,000 a year on average. Salaries and wages paid and other benefits to employees average Rs 3,000 per person employed, 17 per cent of gross sales.

10. The direct benefits of the hotel industry to the economy of Mauritius depend, therefore, very largely on the rate of return to capital and to whom the returns to capital accrue. Total fixed investment in the industry in 1970, at cost less depreciation, was around Rs 10 million. Half the long term capital invested in the industry (in preference shares and long term loans) is Government money. The import component of the initial capital costs of a sizeable tourist hotel can be taken to be 40 per cent of the construction costs and 80 per cent of the equipment, furniture and fittings.

(iii) POLICY GUIDE-LINES FOR FUTURE DEVELOPMENT

11. While international tourism (both that paid for by the tourist himself and that financed on the expense account) is a rapidly expanding business, investment policy and the programming of investment in Mauritius must be based on a careful assessment of the benefits of tourism to the economy and the distribution of those benefits within the economy. For the all-inclusive or package tour, where most of the growth in tourism is taking place, roughly 50 per cent of the whole package costs

go to the overseas airlines and 15 per cent to the foreign tour operator. Allowing for the import costs of supplies and services purchased directly and indirectly by tourists and other visitors and the import component of the depreciation costs of the fixed capital in the industry, earnings of Mauritian or Mauritian based factors of production plus government revenue from indirect taxes would amount to about one quarter of the total expenditure of tourists and other visitors coming to Mauritius. As the main factor earnings in tourism are the profits of the hotel owners and other operators in the industry, the repatriation of profits by foreign owners may reduce earnings in the Mauritius economy to as little as one-sixth of the total expenditure of tourists and other visitors coming to Mauritius.

12. A study of the tourist markets has been made and another economic study of the tourist industry of Mauritius and Rodrigues is being carried out in 1971. As in other sectors, the long term development programme will be based on the findings of one or more professional studies of the economic and technical development potential of that sector.

13. The importance to the industrial promotion programme of the existence of tourist and recreational facilities of high international standard deserves special attention. There is no doubt that foreign prospective investors are influenced in their decisions by amenities offered in this respect to themselves and to the permanent or regularly visiting foreign staff they would employ. Further, it would be valuable to the industrial promotion programme, apart from constituting an important source of revenue by itself, to offer complete conference facilities at some hotels. The promotion and administration of such a service requires a high level specialized organization. The government proposes to set up an International Conference Bureau within the Ministry of External Affairs, Tourism, and Emigration in an effort to develop the obvious prospects of Mauritius in this respect.

14. The immediate need, based on present demand, is for the further construction of approximately 300 to 350 rooms of international visitor standard over the next two to three years, particularly in Port Louis, to cater for business and official visitors.

15. The development of the hotel industry and of related enterprises catering largely for foreign visitors, depending as it does on the willingness to take risks in the investment of capital, on the exercise of initiative and on business contacs, will, in general, in Mauritius, be consider a field for private investment. The main activity of the public sector in the tourist industry will be to plan investment in infrastructure, particularly water supplies, but also electricity, telephones and access roads, and to undertake training programmes to mesh in with planned developments in the private sector. The average consumption of water in the more expensive hotels per guest is 850 litres a day; by 1975 there will probably be a need for half a million cubic metres of treated water a year for supplying foreign visitors on the Island.

16. There has been very considerable government participation in financing investment in hotels in order to get their industry off the ground. Investors will continue to look to public funds, not only as a source of additional finance, but also to reduce the risks on the capital they themselves are putting up and to facilitate borrowing overseas. This is perfectly legitimate; but where investors look to public financing agencies to share the risks, these agencies should also share the subsequent profits. Loans from public funds to finance investment in hotels and related enterprises will, therefore, be made on the basis of an option to convert to equity within a reasonable period.

17. It is important to control investment in hotels and other facilities for visitors from a physical planning point of view, particularly in an already crowded island, in which the development which takes place must be for the benefit of the inhabitants of that island, and not just for the casual visitor. Government is carrying out and will continue to undertake economic studies of the market for tourism in Mauritius, as a guide to private investors and more specifically to determine investment in the public sector in infrastructure and promotional activities.

18. While initial capital investment in the hotel industry and other facilities catering mainly for foreign visitors will be treated in the same way as other capital investment in export-oriented industries and be exempt from import duties, special corporation and income tax concessions on investment in the tourist industry will gradually be abolished. These incentives were necessary, when Mauritius was not on the tourist map, to induce risk capital and management to enter the industry. In fact the purpose of this was not so much *to mobilise risk capital* for investment in the sector, since most of the long-term capital employed was Government money, but to employ the available management capacity in the development of this industry.

19. The annual value of hotel sales for international visitors is normally around 50 per cent of the capital expenditure. In Mauritius this proportion would appear to be somewhat higher, partly because of the low construction costs, due not only to the low cost but also to the high efficiency of labour in the construction industry. On the basis of a turnover equal to half the fixed capital investment, a million rupees invested in the hotel industry would yield an annual return in Mauritius of Rs 150,000 a year in returns to labour and indirect government revenue and Rs 175,000 a year in returns to capital. As there is, now, no shortage of investors wishing to invest in the hotel industry in Mauritius (since the profits are, for the moment, visibly there to be made) there is no logic to granting fiscal incentives to potential investors. Such incentives do not reduce the risks which the investor runs, but simply increase the profits he is able to retain, if there are any, and thereby reduce *pari passu* the benefits of the investment to the economy as a whole and not only to Government coffers. More important for the serious investor, who has a substantial amount of his own capital at stake, is to reduce the

risks of his investment by ensuring that the infrastructure services on which his operations depend are there at the right place and at the right time.

20. Tourism, or, more broadly, the sale of services to foreign and Commonwealth visitors, is one of the income generating sectors of the economy, in that it generates other economic activities and creates additional incomes in the economy. In terms of both incomes and employment, the " multiplier effect " of tourist expenditure within the economy will, in Mauritius, as things stand at present, remain small. The direct incomes of Mauritian factors of production from the expenditure of visitors to the Island from outside the Indian Ocean area would appear to be of the order of Rs 5.5 million a year. The direct employment effect amounts to a few hundreds out of a working population of a quarter of a million. Unless tourist expenditure outside the hotels increases appreciably, the indirect employment effect of the hotel industry would remain small. The tourist industry therefore will have to create new skills and new enterprises which can be expected to lead to further growth in the economy.

21. Expenditure outside hotels by international visitors, that is to say non-residents other than Frenchmen from the Indian Ocean area and Mauritians resident overseas, is small. Tourists are taken to their hotels on arrival and taken back to the airport at the end of their stay with little opportunity to spend their money.

22. The economic benefits from tourism, to the country or locality visited, derive from the fact that the visitor can be charged a " rent ", over and above the ordinary cost of the goods and services supplied to him, for spending his time in Mauritius, either because he wants to go there, or because he has been sent there by his firm, government or other agency. In the case of a country such as Mauritius which lies at a considerable distance from the home of the international visitor, a large part of this rent element is, as has already been pointed out, appropriated by the foreign airline and foreign tour operator before the visitor even sets foot in Mauritius. This, of course, is fair enough, but tends to be overlooked in discussing such matters as who should pay for tourist promotion. Consideration will be given to diverting a part of this rent element to Government in order to finance tourist promotional activities, etc.

23. As the international visitor has already incurred considerable expense in coming to Mauritius before he has even set foot in the country, he also needs to be given ample opportunity to spend his money while he is in the country, if his stay is to bring in the greatest returns to the economy as a whole for the investment in the private and public sector which has made it possible and attractive for him to spend his time in Mauritius. This means, of course, providing the facilities on which the visitor can spend his money; these activities are, in general, more labour intensive in relation to gross sales than the hotel industry itself.

24. It will, therefore, be government policy to encourage the provision of facilities for golfing, water-skiing, underwater fishing, goggling, scuba diving, deep sea fishing and off-shore excursion trips, and to develop more rationally the handicrafts and folklore sectors catering largely for foreign visitors. Such amenities can readily be developed and increased as demand for these facilities is likely to increase with the growing number of tourists. There is a considerable fund of talent in Mauritius, especially in the handicraft and folklore sectors. This will require a lot of organisation in order that a greater share of the earnings from tourism accrues to the economy.

25. In summary, operators in the tourist industry will be left very much to take their own risks, with close collaboration from the public services in providing the necessary infrastructure to get them and keep them in operation; it will be Government policy that a due share of the economic benefits of tourism, in so far as they are available to Mauritius, accrue to the economy as a whole, through normal as well as certain forms of special taxation; it will be Government policy to encourage the diversification of the tourist industry, in order to increase tourist spending and the multiplier effect of that spending, particularly its employment effect.

B. Airline Disbursements

26. Six hundred civil aircraft landed and took off from Plaisance Airport in 1969. The number of passengers handled was:

	1969	*1970 (provisional)*
Landing	33,000	47,000
Embarking ...	35,000	50,000
In transit	16,000	21,000
	tons	*tons*
and cargo handled :		
In	271	449
Out ...	261	365

27. The number of aircraft landing and taking off from Plaisance Airport (including charter flights) rose to 900 in 1970. Excluding payments in Mauritian Rupees for aviation fuel and excluding commissions paid to local travel agents on passenger tickets and cargo for outward flights, disbursements by commercial airlines in Mauritius in 1970 amounted to approximately Rs 10 million. Listed approximately in order of importance of local cash disbursements, the airlines serving Mauritius are:

Queensland and Northern Territories Air Service (Qantas)
Air France
South African Airways
British Overseas Airways Corporation

Air India
East African Airways
Zambia Airways
Lufthansa (West Germany)

Of the total disbursements, Government revenue, in landing fees and fuel throughput charges, accounted for some Rs 2 million.

28. Civil aircraft, passengers, mail and cargo are handled at Plaisance Airport by Air Mauritius. Handling fees bring in a total of some Rs 1 million a year. Air Mauritius, which is jointly owned by the Mauritius Government, Rogers & Co., Air France and B.O.A.C., is also engaged in joint operations, on a profit sharing basis, with Air France on the Reunion-Mauritius run and, since 1970, with South African Airways on the Johannesburg/Durban-Mauritius regional service.

29. Catering for aircraft leaving Mauritius or in transit is undertaken by New Mauritius Hotels. Gross returns work out to Rs 1.5 million in 1969.

30. These earnings are not, of course, net earnings of the economy. Broadly speaking, one may say that 20 per cent of the gross earnings from airline disbursements are derived from the transit trade between South Africa and Australia, 50 per cent from expenditure on airline travel to and from Mauritius by non-residents and 30 per cent from expenditure on airline travel from and to Mauritius by local residents.

C. Expenditure by Foreign Governments and other Official Agencies

31. Expenditure by Commonwealth and foreign governments and other official agencies and their staffs in Mauritius is running at around Rs 15 million a year. By far the largest part of this expenditure is accounted for by the disbursements of the British Government on its naval communications centre in Mauritius and of British naval and Admiralty staff stationed at the centre.

32. The expenditure of Commonwealth High Commissions and Foreign Embassies and their staffs in Mauritius comes to Rs 2 million a year. This is about equal to the disbursements of Mauritian High Commissions and Embassies and diplomatic staff abroad.

33. The expenditure of the office and staff of the United Nations Development Programme is around Rs 600,000 a year and that of experts of the United Nations and specialised and associated agencies in Mauritius around Rs 1.2 million. This again is approximately equal to what may be considered to be the foreign exchange expenditure by the Mauritius Government on the technical assistance services provided under these programmes.

APPENDIX

Tourist Development 1967—1970

Country of Residence	*Number of Tourist Arrivals*			*Tourist Nights*		
	1967	*1969*	*1970 Jan–June*	*1967*	*1969*	*1970 Jan–June*
Kenya	552	574	376	3,764	4,355	2,623
Malagasy Republic ...	1,598	2,050	837	19,188	24,236	7,092
Reunion	6,242	8,905	4,946	79,017	105,018	66,361
South Africa	1,209	2,680	1,583	14,525	23,792	14,784
Tanzania	111	194	79	901	1,054	841
Zambia	318	332	622	4,727	3,130	6,580
India	257	272	208	3,693	5,482	2,660
Japan	53	86	43	683	1,058	230
Australia	753	1,162	753	4,632	7,877	4,285
New Zealand	101	224	108	619	879	1,062
France	888	767	536	8,219	6,531	4,514
Federal Germany ...	88	n.a.	176	734	n.a.	1,536
Italy	69	146	74	367	1,049	560
Switzerland	78	77	42	731	694	278
United Kingdom ...	1,056	1,524	810	14,711	19,609	10,446
Canada	33	57	33	222	391	124
U.S.A.	373	506	265	3,144	4,085	1,951
Other Countries ...	1,035	1,031	612	12,092	11,332	5,553
TOTAL ...	14,814	20,587	12,103	171,969	220,572	131,480

Figures are not available for July–December, 1970.

CHAPTER XVI

HOUSING

A. Background

The value of residential buildings in the city of Port Louis and the four Municipalities of the Plaines Wilhems is roughly Rs 400 million. This is the value at current building costs allowing for depreciation.* The value of residential buildings in the villages and rural areas is estimated at Rs 260 million.

TABLE—VALUE OF DWELLING HOUSES IN MAURITIUS, 1971

	Approximate Population December 1969 *Thousands*	*Number of Houses*	*Value of Buildings* *Rs Million*
Port Louis	139	15,100	151.92
Beau Bassin—Rose Hill	71	9,294	79.69
Quatre Bornes	45	5,602	49.49
Vacoas—Phoenix	49	5,778	46.27
Curepipe	52	5,678	73.65
Municipalities	356	41,452	401.02
Other areas	451	36,350	259.25
Mauritius	807	77,802	660.27

2. Judging by the latest consumer expenditure survey carried out nearly ten years ago, consumer expenditure would appear to be 35 per cent higher per head in the municipalities than in the rest of the Island. On this basis, total personal consumption expenditure by residents of the municipal areas may be estimated at Rs 375 million a year, and that of residents outside the Municipal areas at Rs 350 million.

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* The higher average value per house shown for Curepipe would appear to be due to overvaluation, rather than to a better average standard of housing. Parts of residential dwellings are not infrequently used for commercial purposes, and the value of these parts has been included in the above table.

3. Taking the annual cost of capital and management as 10 per cent of the current capital value, annual expenditure on housing would amount to 11 per cent of total consumer expenditure in the City of Port Louis and the Municipalities and 7½ per cent of total consumer expenditure in the rest of the Island. Maintenance costs, again taking the household expenditure survey conducted by the I.L.O. as a guide, would appear to have amounted to 1.7 per cent of the capital value of the houses in the municipalities and 3.4 per cent in the villages and rural areas. Expressed in annual terms, expenditure on housing, including maintenance, would thus appear to amount to 12½ per cent of total consumer expenditure in the urban areas and 11 per cent in the rural areas.

4. There are three bodies in the public sector concerned with financing the construction and purchase of dwellings and with building houses and flats for sale or rent.

5. The Central Housing Authority was established by Ordinance in November 1960, to carry out the Cyclone Housing Scheme proposed by the Housing Adviser to the Secretary of State for the Colonies who visited Mauritius in March 1960, to report on the damage caused by the cyclones of January and February 1960. This scheme, financed by grants and loans (repayable over 25 years) from the United Kingdom to the tune of Rs 84.3 million aimed at building, in about five years some 14,000 low cost houses. Difficulties arose on account of the unavailability of sites, the lack of adequate town planning facilities, the inability of some cyclone victims to pay an economic rental, the refugee problem of January 1968 and unrealistic expectations of " free housing ". The objective was, however reached in 1970.

6. The Mauritius Housing Corporation was set up in 1963 to take over the housing loan business of the Mauritius Agricultural Bank. It raises its capital on a commercial basis to meet the mortgage requirements of the predominantly middle-income groups. Although the Corporation is in a sound financial position, ensuring the safety of any long-term investments, its repayments schedule, based on relatively high interest rates, has prevented it from catering for the low income groups. During the period 1965-69, the Corporation has paid out Rs 30.7 million on mortgages and has completed 1,834 houses. The Mauritius Housing Corporation Amendment Act, 1971 empowers the Mauritius Housing Corporation to own land, to build and to rent houses including flats.

7. The Sugar Industry Labour Welfare Fund has since 1962 operated a housing loan scheme to the benefit of sugar industry workers. It provides interest-free loans which can be repaid over a period of 35-40 years and operates a life insurance scheme to cover the beneficiary during this period. In the case of estates, the land is provided by the sugar estates. This scheme brings the posibility of ownership to a great number of sugar workers. On December 31st 1970, 3,301 houses had been built by the SILWF. Besides, the fund has also set up 9 blocks of 198 flats at Roche Bois which are rented to dock workers.

8. The average current value of housing in the municipal areas is Rs 10,000 per house, excluding the value of the land. This is a rather better house than could be constructed for the same money in most other parts of the world. Building costs in Mauritius are low, not only because of the comparatively low cost of skilled and semi-skilled as well as unskilled labour, but also because of the efficiency of that labour, which enables a fuller use to be made of the equipment employed and the costs of financing the construction before a dwelling is ready for occupation to be minimized.

9. The approximate breakdown of the costs of a house built at an overall cost of Rs 20 per square foot and those of three storied flats costing Rs 25 — 30 per square foot are:

	House	*Flats*
Labour	19.0	17.0
Steel (incl. openings)	20.0	24.0
Cement	15.0	19.0
Sand and macadam	2.5	3.0
Sanitary and water fittings	2.5	1.0
Glass panes	1.0	1.0
Paint	1.5	1.0
Timber	3.5	2.0
Legal and Insurance fees	1.5	1.5
Site preparation	1.5	1.5
Equipment	3.0	3.0
Transport	2.0	2.0
Architect fees	6.0	6.0
Overheads and contractor's profit ...	15.0	15.0
Various	6.0	3.0
TOTAL ...	100.0%	100.0%

B. Policies and Programmes

10. Private consumption expenditure can be expected to increase in the 1970's at an average rate of 6 per cent a year (at constant prices), that is to say by a little more than the anticipated rate of increase in employment and less than the anticipated rate of increase in output, to Rs 1,300 million by 1980. More than half the population may be expected to live in the urban areas by 1980, compared with 43 per cent

in 1962, simply for reasons of being more conveniently situated in relation to their work, provided that the houses or flats are there for them to live in. Urban areas in this sense do not necessarily mean the areas within the present municipal boundaries, but the Port Louis area and the linear city stretching up the plateau to Curepipe and other areas of reasonably high density which may be more logically created close to major centres of employment.

11. Assuming that the incomes of urban dwellers remain, as now, a little above the level of those living in smaller or more scattered communities, the private consumption expenditure of urban dwellers would total Rs 750 million by 1980. Expenditure on housing is proportionately greater for higher than for lower income groups (provided that there is a free market for housing), up to quite high income levels. However, even at the present ratio of expenditure on housing to total consumer expenditure (12½ per cent, for urban dwellers), expenditure on housing, including maintenance, in the urban areas would, in annual terms, amount to Rs 95 million by 1980. This would represent a capital value of housing in the urban areas of Rs 750 million, compared with a value (at current building costs, allowing for depreciation) of Rs 400 million within the present municipal areas.

12. It can be expected, therefore, that the population of the existing and any new urban areas would be in a position and would be prepared to pay for housing which at cost less depreciation is worth Rs 350 million more than the present stock of dwelling houses in the municipal areas. Allowing forty years for the average life of a dwelling house, this implies a construction programme of Rs 450 million in the urban areas over the next ten years*. This would be 17 per cent of anticipated gross capital formation in this period.

13. This is the magnitude of the demand for housing in the urban areas indicated by the employment targets, and output and income implications, of the development plan, and by the pattern of consumer expenditure. The supply of housing depends on investment decisions taken not by the consumer, except the very affluent, but by people and agencies other than the consumer. The stock of housing to meet this demand, at cost, including profits in the construction industry, the cost of management and the cost of capital, will only be there if the investment decisions have been taken in time in both the private and the public sectors. If the demand for housing is not met this will mean that people are not living in houses or flats which they can afford and are willing to pay for, but that they are paying landlords who control scarce dwelling space in areas where people want to or have to live more than the costs

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* i. e. including the replacement of one quarter of the existing stock of Rs 400 million.

of that accommodation or that they are unable to exercise their choice as consumers on how much of their income they want to pay for accommodation, at the true cost of providing that accommodation, and live in cheaper or more inconvenienty located accommodation than they would be prepared to pay for, if it were available.

14. The construction programme for dwellings indicated by the expected development of the economy of Mauritius in the seventies is not that much greater than gross investment in dwellings in the sixties, which averaged Rs 40 million a year for the Island as a whole. The earlier and middle years of the decade were a period of a reconstruction after the damage caused by cyclone Carol in 1960, one of the three worst cyclones of the last hundred years.

15. The size of the construction programme for the seventies is that which is indicated by the prospective demand for housing, that is to say by how well the urban dwellers themselves will wish to be housed out of the income which is expected to be available to them. This programme is, therefore financeable. There will not, however, be an investment programme in dwellings of a size required to meet the prospective demand without a substantial programme of lower cost housing in the urban areas in the public sector. This programme must provide housing for people with incomes, who can afford to pay the costs of the housing which is put up over the period of the occupation of that housing. The development strategy for the decade aims at providing incomes for the entire labour force; the provision of subsidised housing, that is to say a better standard of housing than people can afford to pay for, cannot be financed from either internal or external sources.

16. There is a minimum standard of building and hence a minimum level of costs which can be considered acceptable in any public sector housing programme. In Mauritius, because of the low costs in the construction industry, this can be as low as Rs 16 a square foot, including the builder's profits. One arrives at a point therefore where the minimum cost of housing and the maximum which a section of the urban population can afford to pay in rents do not quite match up. It must be recognised that a section of the population of Mauritius will remain inadequately housed by social welfare standards at the end of the decade and even at the end of the century. The aim must be to provide housing to meet the anticipated economic demand; it would be political and economic folly to pursue an economic development path of creating employment and incomes for the labour force and then compel that labour force and their families to live in squalor because the investment decisions to meet their demand for housing have not been taken in time

17. Nonetheless, some element of subsidy at the lower margin of the housing programme is bound to creep in practice. It is precisely the public sector housing programme that has to take the risk that people's incomes

in particular urban areas will not be adequate to pay economic rents for all the housing constructed. It would be socially and economically at least as undesirable to fail to meet the actual demand for housing as to find oneself with slightly more housing than people can pay for. This adjustment between actual demand and the stock of housing available must be made through setting rents at levels which equate demand and supply and this may lead to lower rents in some cases than would be needed to repay the full cost of the housing.

18. It would seem important therefore that the public sector housing programme should cover a broad spectrum of housing in order to minimize the cost of " subsidies " at the lower margin in relation to the costs of the housing programme as a whole. To spit up the public sector housing programme into parts which are easily self-financing and parts which cannot be self-financing would mean that the socially most important part of a housing programme which is indicated by the relation between prospective consumer income and costs in the building industry cannot be financed and carried out. It is also important, in order to give the public sector housing programme the necessary elbow room to take the risks that some of the housing may not be let at fully economic rents, that a part of the finance available for the programme is on grant or soft loans terms. It is better that there should be an element of subsidy in the programme at the outset—to cover risks and not to enable better housing to be built than people can afford—and that the programme should be financially sound than to launch a programme which leaks at all seams and has constantly to be baled out.

19. The costs of the programme indicated above relate only to the actual buildings, including site works. House dwellers also need water, sewerage, light and power, refuse collection, roads and other urban amenities. The costs of these utilities and urban services are estimated on an annual basis, on the basis of the available information, at 70 per cent of the annual costs of dwellings (including management and maintenance), assuming that these costs will be proportionally reduced through higher densities of utilisation and improved organisation. For the greater part these costs, as in the case of residential buildings, are capital costs. The cost of the investment required to provide these utilities and urban services over the next decade may be estimated at half the capital costs of the residential buildings themselves.

20. Buildings stand on land. Land is not a cost element in the investment programme for the economy as a whole. It is, however, a cost to the investor in the building programme, including the public sector, since all the land of the Island, apart from 50,000 acres, was given away by the French Crown*. Prices of building land are Rs 20,000 to Rs 100,000

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* 30,000 acres were subsequently purchased for forestry use by the British Crown.

an acre on the Plaines Wilhems and up to Rs 200,000 in Port Louis. It is important that there should continue to be a market in land, so that this scarce factor is allocated to those uses which are of the greatest economic importance. At the same time the objective of creating employment and incomes would be largely negated if the consumer demand arising from these incomes is simply channelled into profits for the speculator in urban land. Government has powers to expropriate land for public purposes, paying compensation at a fair valuation. It will be as well, however, to minimize the need for administrative decisions and to operate as far as possible on a willing buyer/willing seller basis, while ensuring that land speculation does not make a building programme to meet the prospective demand by urban dwellers impossible in both the public and the private sector.

21. The discussion in this chapter has been concerned with the urban housing programme and related facilities, as this is where most of the public sector investment in housing and facilities will need to take place, and where some preliminary estimates of the size of the investment programme that is required can be made. In an island of the size of Mauritius, all of which can, in any case, be regarded as "commuter country", it is neither sensible nor necessary to plan separately for the "urban" and "rural" areas. These are, in Mauritius, very relative terms with respect to size of population clusters and densities of population. As recommended by the U.N. adviser on the subject, the whole of Mauritius will be declared a planning area. To prepare the physical plan for the Island, a physical planning team will be set up, to be staffed in the first instance largely under technical assistance arrangements.

CHAPTER XVII

HEALTH

A. The Health Situation

With the eradication of malaria in the 1950's and a gradual improvement in environmental sanitation, the crude death rate dropped from 27.5 per thousand in the mid-forties to 8.0 per thousand at the end of the sixties. Nonetheless, the morbidity rate in the population remains rather high, as compared with higher income countries. Infant mortality, which is one of the best indicators of the health of the population in general, dropped from 155 per thousand in 1930's to 70 per thousand in the fifties, but has since remained at this level. This compares with a rate of 15 to 20 per thousand in high income countries. One third of the infant death occur in the first week of life. This is indicative of the low nutritional status of the mother, the lack of skilled attention at the time of birth and the lack of adequate infant care. Deaths after the first month of life, which account for half the infant mortality, are mainly due to gastro-enteritis and other diarrhoeal diseases. The factors contributing to this high incidence are mostly poor hygiene, shortage and questionable quality of the water supply and poor environmental sanitation.

2. A major part of the cases treated at hospitals and dispensaries, apart from injuries and accidental poisonings, are attributable to nutritional deficiencies, anaemia and helminthic and other parasitic infestation—that is to say, to poor food and poor sanitation.

B. Expenditure on Health

3. Government expenditure on the medical and enviromental health services is between Rs 25 and 30 million a year. This is 14 per cent of total recurrent government expenditure in Mauritius, excluding the servicing of the public debt. Private expenditure on medical services and supplies averaged Rs 80 a year per household at the time of the last family budget survey ten years ago. Total expenditure on health services would therefore appear to be around Rs 50 per person per year, 5 per cent of national income. The import content of current expenditure on medical care is around Rs 8 million a year.

C. Health Services

4. The needs of the population and the already high cost of the government health services in relation to government revenues make cost-effectiveness the criterion for the further development of the health services in the public sector. This means:

(a) extending the preventive and environmental health services;

(b) reorientating the medical services, so as to give more emphasis on preventive and promotive rather than on curative measures. This would mean more medical coverage for the 40 per cent of the population under the age of 15;

(c) reorganising the health services and breaking bottlenecks in the medical services in order to make the most effective use of the available staff and financial resources.

5. There are three main government hospitals with a total of 1,450 beds: the Victoria Hospital at Candos, just South of Quatre Bornes; the Civil Hospital at Port-Louis; and the newly completed Sir Seewoosagur Ramgoolam National Hospital, near Pamplemousses. There are further five government district hospitals with a total of 550 beds at Mahebourg, Flacq, Souillac, Moka and Long Mountain. This makes 2.5 beds in public general hospitals per thousand of the population.

6. The Ministry of Health maintains a tuberculosis hospital with 160 beds at Poudre d'Or, and a leper hospital with 60 beds. There are two prison hospitals with a total of 45 beds and the Police Medical Service maintains 15 beds. A 35 bed hospital staffed by doctors and ancillary personnel of the British Admiralty caters for the personnel of the British Admiralty stationed in Mauritius. The 21 sugar estates provide hospital services, with a total of 430 beds, and dispensary services for the monthly paid employees and their families residing on the estates. There are seven private nursing homes and clinics with a total of 175 beds.

7. The hospital services in Rodrigues consist of the 80 bed Queen Elizabeth Hospital at Crève Coeur on the outskirts of Port Mathurin and two cottage hospitals with a total of 60 beds at Mont Lubin and La Ferme.

8. Apart from the out-patients' departments of the hospitals, the Ministry of Health operates 44 static and five mobile dispensaries. In 1968 there were 60,000 admissions to government hospitals, 50,000 surgical operations on in- and out-patients and 2.7 million attendances at out-patients' departments and dispensaries. The average attendance at the dispensaries is 150 persons per three hour session, allowing for an average consulting time of less than one minute per patient.

9. Dental services are provided by the Ministry of Health at five static and three mobile clinics, mostly for school-children and expectant and nursing mothers.

10. Mental patients are accommodated at the 800 bed government Brown Sequard Hospital and in nine authorised infirmaries and convents. The number of mental patients is two per thousand of the population.

11. There are fourteen public health offices on the Island and a School Medical Service based at Rose-Hill providing care and treatment to children at primary schools and Government Secondary Schools. Maternal and child health services are provided at eight maternity and child health clinics and five hospitals and at the 31 Social Welfare Centres. There is one mobile ante-natal clinic. District mid-wifery services are provided through the maternal and child care centres on a 24 hour basis. 27 per cent of deliveries are attended by district midwives and 33 per cent take place in hospitals and other approved institutions. An environmental health unit has been established in the Ministry with assistance from the World Health Organisation.

12. The pathology laboratory at Candos provides microbiological, biochemical and pathological services to both the curative and public health divisions of the Ministry of Health. The Government Chemist's laboratory carries out analyses of food, water and drugs for both government and the private sector and also forensic analyses.

13. There are 140 medical officers in the government service and 70 in private practice (January 1971), making an overall ratio of one per 3,800 of the population. There are five dentists in the government service and 14 in private practice. 1,000 nurses and 250 other technical staff in the medical services, as well as 2,000 non-technical staff, including trainees are provided for on the establishment of the Ministry of Health.

14. Basic health services—family planning, maternal and child care, institutional midwifery, immunisation, nutrition and health education, environmental health, as well as general curative services—will be provided at 50 health centres, each catering for a population of 15,000 to 20,000, of which twenty in the towns and thirty in the rural areas. Thirty of these centres will be built in the plan period. Where practical, existing dispensaries and health offices will be converted or enlarged to form the new health centre. The main problems that this project is designed to solve are:

(a) *Lack of co-ordination in the health services*, e.g., curative services are provided in hospitals and in dispensaries, preventive services at health offices and promotive services in the maternal and child health centres. Furthermore, the personnel employed in these different services come under different chains of command. This situation leads to fragmentation and to undue waste of resources.

(b) *Lack of efficiency of services actually available*, e.g., the district midwifery services cannot cope with its main objective which is domicilary confinement. The result is reflected in the high percentage (40 per cent) of deliveries performed by "dais", and the high neonatal death rate (32%)—nearly 50 per cent of total infant deaths.

(c) *Undue load on hospitals.* Due to the fact that many diseases that are preventable or curable at an early stage at periphery are not adequately controlled or treated. 25 per cent of hospital admissions are due to the following diseases: anaemia, enteritis and other diarrhoeal diseases, helminthiasis, avitaminoses and other nutritional deficiencies, abortions and complications of pregnancy. 60,394 patients were admitted to hospital and 2,389,388 were given out-patient treatment during 1970.

15. The provision of a nation-wide health service of this kind is also an essential component of a successful family planning campaign, both in integrating family planning services within the health services at the local level and in reducing infant and child mortality. Infant mortality is an uninsurable risk and the evaluation of that risk by the prospective parents is therefore high, in relation to the actuarial risk. Family planning commends itself only where infant mortality is at a low level.

16. The main bottlenecks in the curative services are the underutilisation of the physical capacity of the 422 bed Sir Seewoosagur Ramgoolam National Hospital and the underutilisation of the surgical staff at the Victoria Hospital. The 67 bed Long Mountain Hospital will be converted into an annexe of the Brown Sequard Mental Hospital, where the bed occupancy rate is consistently above 100 per cent. At the Victoria Hospital an operating block will be constructed with two operating rooms and two surgical wards.

17. The Mahebourg and Flacq Hospitals will be upgraded to intermediate hospitals by providing additional facilities for surgery, gynaecology and obstetrics and each of the district hospitals will be provided with a paediatric ward and day-to-day facilities for laboratory and X-ray services.

D. Staffing and Training

18. The staffing position with regard to doctors in the government service is a difficult one. This is not so much a matter of a physical shortage of Mauritian doctors as a question of pay-scales in a profession which very largely enjoys an international market for its services. One sixth of the salaries bill of the Ministry of Health is paid to medical doctors, at an average of Rs 20,000 a year. A substantial proportion of Mauritians who qualify for the medical profession take up more remunerative posts abroad and in recent years a number of medical practitioners have emigrated.

19. It will be necessary to continue sending medical students for training abroad at at least the present level, and to bond those whose training is financed by the Mauritius Government, or through scholarships offered under technical assistance programmes, for service with the

government for seven years after qualification. It will also be necessary to minimise the demands made on the services of medical doctors in the further expansion of the health services in the public sector and to develop these more through the employment of intermediate personnel. Those who are in a position to pay for all or a significant part of the cost of their medical services cannot, however, contiue to expect to receive these free from Government at the expense of the doctors attending them being underpaid by international standards. Some improvement in the gross earnings of doctors in the government service will need to be brought about.

20. While the staffing position with regard to medical doctors in the public service is difficult, that with regard to dentists is acute. There were ten dentists on the staff of the Ministry of Health in 1967. In 1968 seven of these left the service. There are five on the staff at present. Eleven dentists have emigrated in the last five years, while two have returned to Mauritius after qualification. The government dental service is practically restricted to tooth extractions and there is not time for preventive and curative dental care for school children. The Island of Rodrigues (population 25,000) was not visited by a dental surgeon for three years before 1971 when a resident dentist was provided under technical assistance.

21. There is an urgent need for more dentists to be provided under technical assistance arrangements for work in the public service with vulnerable groups of the population and for the training of Mauritians abroad in dentistry. At the same time the conditions of service for government dentists will be improved.

22. There is a problem of recruitment also for nurses in the public service. The average pay of registered nurses of all grades in the public service is Rs 5,500 a year. Nursing staff accounts for 30 per cent of the total salary bill of the Ministry of Health. Because of the high educational standards in Mauritius, as compared with lesser developed countries, it is inevitable, in a free society, that there will be a brain-drain from Mauritius of certain categories of skilled workers. In the case of the health services this cannot be checked by pushing up salaries since the salaries bill accounts for two-thirds of the total recurrent expenditure.

23. It will be necessary to expand the training facilities of the Ministry of Health for nurses, midwives and dispensing assistants, in order to supply the intermediate personnel on whom the expansion of the health services on the Island will mostly rely. To some extent it will be necessary to overproduce trained personnel to allow for the fact that a porportion will be drawn off to take up employment in countries offering higher rates of pay. In the case of personnel largely trained on the job, who contribute their services while undergoing training, the over-production of trained manpower is comparatively inexpensive.

24. Training of health inspectors and of engineering assistants is being organised at the University of Mauritius. Laboratory technicians are trained in Mauritius for three years and sent abroad for a further

two years to complete their training. A full five year course in medical technology will be started at the University of Mauritius. These University courses will also be available to students from other African countries.

E. Financing the Health Services

25. The priority in the provision of health services in the public sector will be preventive medicine and environmental hygiene, nutrition and health education and, in particular, maternity and infant and child health services, which are an integral and necessary part of a successful family planning campaign. The level of the curative services must be geared to what the country can afford. It will be necessary to prevent public expenditure on health being swallowed up by expenditure on the curative services, at the expenses of preventive and environmental services and health education. At the same time Government will endeavour to provide a level of curative services in the public sector (which is better equipped than the private sector to provide certain of these services) which is the best that can be provided at the expenditure which people are able and willing to incur. Curative services will therefore be provided at a nominal charge, within the limitations imposed by budgetary considerations, only to those families who are not in a position to pay more than a nominal cost of these services. Budgetary constraints would permit an increase in recurrent expenditure on health services by about only 4.0 per cent. p.a. Consideration is being given to the possibility of introducing group health insurance schemes in various enterprises and Government. This will mean that the health services will charge full expenditure incurred on treating the people thus insured. Such revenue can supplement the budgetary resources towards the expansion of health services.

26 The government medical services will, in association with medical practitioners in private practice, provide hospital and laboratory services at full cost, or the major part of the costs, to those families which are in a position to pay for these services. The Ministry of Health will also provide hospital and laboratory services on a contractual basis to large employers for the benefit of their employees. Dental services in the public sector will continue to be restricted to school children and nursing and expectant mothers and free minimal services for those who cannot afford to pay dental treatment.

27. This will enable the best use to be made of the qualified staff and facilities in the public sector for employers of labour and private patients who can afford to pay for the greater part of the costs of the medical services provided to them, while at the same time enabling the government medical services to carry out their main task in the field of public health, with emphasis on family planning and health education, and providing a reasonable level of curative services for the greater part of the population which is not able to pay for those services directly out of its wage income.

CHAPTER XVIII

SOCIAL WELFARE

A. Present Situation

Mauritius is a society of fourth to tenth generation immigrants. The traditional systems of mutual aid in the societies of the homelands from which Mauritians originated became attenuated, at times to the point of being completely dissolved, on emigration to Mauritius or in the course of their descendants' stay on the Island. Mauritius has, furthermore, been a wholly cash economy right from the start (with wages being paid mostly in kind up to 1832). Subsistance farming, with its possibilities of sharing out food and work with relatives as the need arose, was forbidden under French colonial rule and economically impractical under British colonial rule. Those who could not, for one reason or another, earn their own living and look after their wives and children have therefore, in the last resort, been a charge on the State.

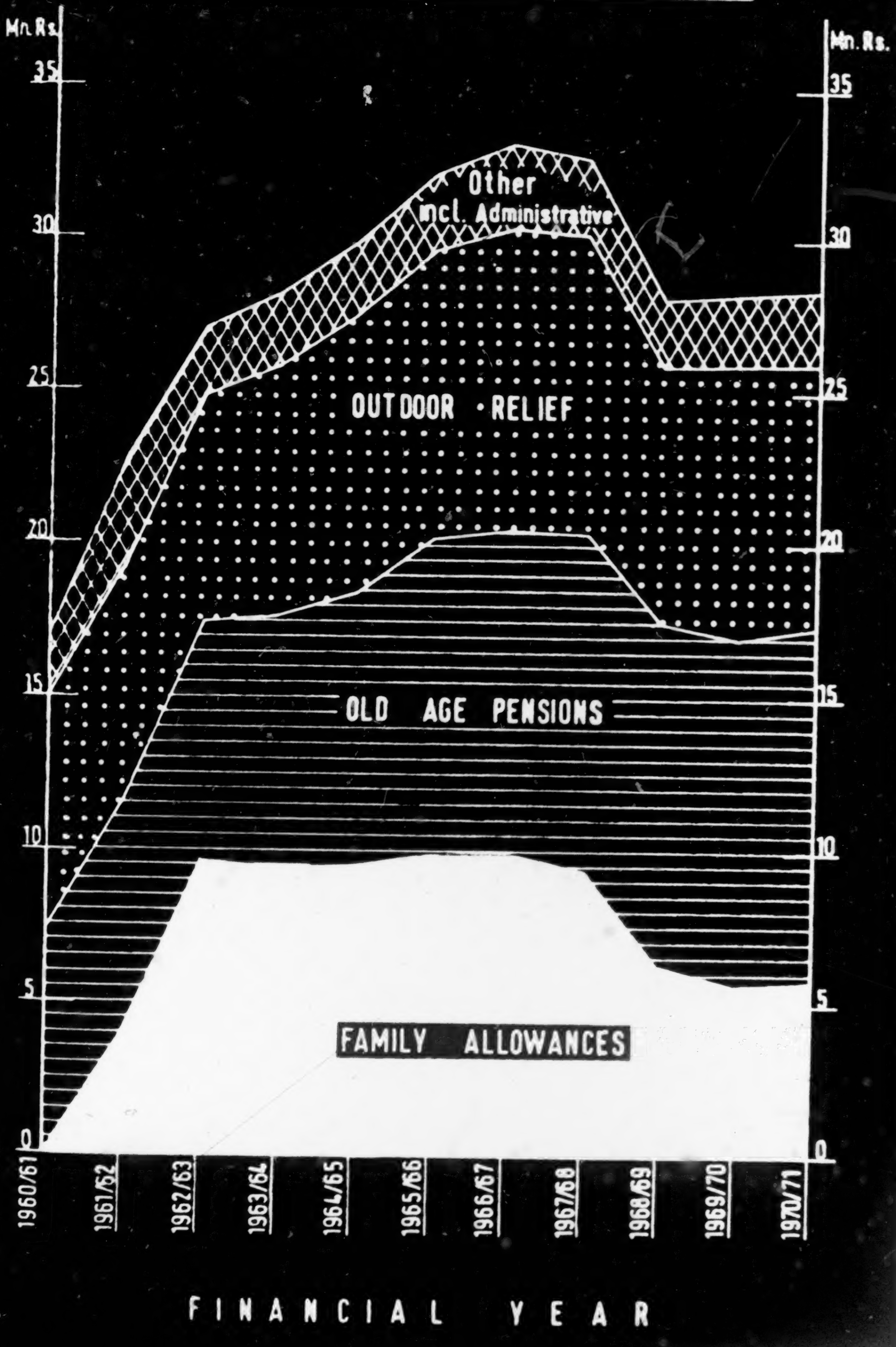
2. Since the begining of this century there has been some concern by the State for the welfare of its citizens. The first elections to the Legislature on the basis of universal adult suffrage were held in Mauritius in 1948 and for the last couple of decades this sense of responsibility for social welfare has also been highly articulate.

3. In 1948 the Sugar Industry Labour Welfare Fund was set up to promote the welfare of workers employed in the sugar industry. In 1962, regular dock workers were brought into the scheme. The Fund, which is financed mainly by a levy on sugar purchased by the United Kingdom, has had in recent years an average annual income of Rs 2.5 million. The main activities of the Fund have been in the field of housing (with 3,300 houses built by the end of 1970), in the construction of some 30 multi-purpose Social Welfare Centres and in providing scholarships for the children of sugar industry workers.

4. On the recommendation of Professor Titmuss, family allowances were introduced in 1962. These are now paid to over 40,000 families with three or more children under the age of 14 whose incomes do not exceed Rs 225 a month. The rate of payment is Rs 10 per family per month making a total of Rs 5½ million a year.

5. There are 50,000 people on the Island over the age of 60. Those not liable to pay income tax and blind persons over the age of 18 receive a state pension of Rs 22 a month, making a total of Rs 11½ million a year.

SOCIAL WELFARE EXPENDITURE



6. Apart from these regular payments to certain categories of people with inadequate incomes, ad-hoc payments, known as " outdoor relief ", have for many years been made on a modest scale to people without other sources of income. There are on average 30,000 such persons receiving outdoor relief at any one time, 70 per cent of them through being unable to work on account of sickness. The average payment is around Rs 30 a month, making a total of Rs 9 million a year.

SOCIAL WELFARE EXPENDITURE

		Family Allowances	*Old Age Pensions*	*Outdoor Relief*	*Total Social Welfare Expenditure ex-budget incl. administration*
		Rs Thousand			
1960/61	...	17	7,395	7,626	17,149
61/62	...	3,961	7,609	7,745	22,866
62/63	...	9,585	7,885	7,331	27,039
63/64	...	9,443	8,151	8,262	28,188
64/65	..	9,506	8,932	9,084	29,917
1965/66	...	9,830	10,367	9,406	32,183
66/67	...	9,865	10,590	9,961	33,192
67/68	...	9,443	10,953	9,751	32,727
68/69	...	6,212	11,263	8,319	28,011
69/70	...	5,546	11,603	8,626	28,042
1970/71	...	(5,640)	(11,616)	(8,642)	(28,352)

B. Future Policy

7. It would, of course, be desirable to extend the system of social security payments and to put some of the more ad-hoc payments onto a more regular basis, though this is not always an easy matter. Social security payments, modest though they are, are a substantial chunk of government recurrent expenditure. Expenditure on social security and welfare out of the budget, including administrative overheads, increased from Rs 17 million in 1960/61, before the introduction of family allowances, to Rs 33 million in 1966/67, 19 per cent of recurrent government expenditure in Mauritius.

(i) *Unemployment Relief*

8. In view of the large-scale unemployment and resultant hardship for many families in Mauritius, demands have been put forward for instituting a system of unemployment benefits. It is considered neither socially desirable nor financially and administratively practicable to implement a scheme of wholesale unemployment relief. It is important therefore to emphasise the positive measures that are planned to meet the unemployment situation and the perspective in which the unemployment problem needs to be looked at.

9. It is essential to consider the inter-relationship between unemployment and unemployment relief. This requires:

(1) an appreciation of the nature, extent and causes of the unemployment problem in Mauritius; and

(2) a careful consideration and clear understanding of the problem and the circumstances under which unemployment benefits could work either as a positive force or as a hindrance to future economic development.

10. The unemployment problem in Mauritius is not only grave; it is also chronic. On a rough estimate, it would seem that almost 20 per cent of the economically active population in Mauritius is unemployed. Apart from this magnitude of unemployment, there is considerable under-employment and sub-marginal employment. This means that among those who can be considered 'employed', a large number of people are employed only part-time or get incomes from their employment or self-employment which are grossly inadequate to support them and their families. The major causes of this magnitude of unemployment may briefly be stated as:

(i) a high growth rate in the size of the labour force in relation to the capacity of the economy to create productive job opportunities;

(ii) the scarcity of land, lack of natural resources, the structure of productive activity, particularly agriculture (which though commercially and economically profitable, is not conducive to the absorption of an increasing labour force), the small internal market;

(iii) lack of imaginative planning in the past in that productive job creation has always been a lower priority than income creation;

(iv) past measures to relieve unemployment have distorted the income structure in that the provision of additional jobs did not create a corresponding productive capacity in the economy.

This is a situation which requires a radical departure from the structure and policies which have created the present state of affairs. No piece measure can solve the problem. Adequate structural changes with well thought-out and supporting policies are needed for a solution of the problem. This is what the plan aims to do.

11. Unemployment relief, by its very nature, is a short-term, temporary measure. Unemployment relief, where it works, is operated in a situation of temporary unemployment and not that of a chronic one. Unemployment relief can be a positive force in development only in an economy which has underutilized productive capacity, but where there is insufficient aggregate demand. The increase in aggregate demand utilizes existing capacity, produces incomes and investment and hence increases employment. Unemployment relief thus becomes self-liquidating. The Mauritian situation on the contrary is very different. There is some excess capacity in industries but there are only few industries and the excess capacity is not the result of lack of demand. Both physical resources and entrepreneurial capacity are lacking to undertake investment and organize productive capacity to take advantage of increases in demand resulting from income distribution to the unemployed. In fact, the effect will be to increase imports which will impair reserves and create balance of payments difficulties, undermining the capacity to undertake development and create permanent productive job opportunities. Unemployment relief in such a situation will become self-pertuating.

12. The problem of unemployment in Mauritius has been generally recognised and various steps have been taken, both in creating jobs and in providing relief. However, it has never been within the capacity of the Government to provide jobs or relief to all who fail to find productive employment.

13. Employment creation is now accepted as the major objective of the Plan. Policies and programmes elaborated in this Plan are aimed at the creation of productive jobs to produce more real incomes in the economy. The strategy for such a development is explained in various chapters of the Plan. The package of programmes and policies must be implemented in full as they are all inter-related. Lack of progress in any one sphere can impede progress in other fields. And the introduction of measures inconsistent with the 'package' would distort the whole picture.

14. The Plan has considered the development programme at three-time horizons: (1) the perspective to 1980; (2) the 4-Year Plan 1971-75 and (3) the immediate action programme. The immediate programme to relieve the unemployment situation is extremely important to the creation of an environment for a serious development effort. The immediate action programme to be administered by the Development Works Corporation is aimed at creating 10,000 full time jobs in the first year, eventually increasing to 15—20,000 in the second year. The Corporation is expected to work for four years until the economy has gathered enough momentum to create permanent productive jobs for the new entrants to the labour force every year. This is a positive step for the immediate relief of the unemployment situation.

15. Other immediate positive steps include Government's plans to provide educational facilities, including technical and vocational training to 60 per cent of the population in the age group 15-19. This will initially mean fewer entrants to the labour force. Further, the proposed National Pensions Scheme enabling people to retire at the age of sixty will create substantial opportunities for younger people to be absorbed in productive activity.

16. In the final analysis, the use of resources for the creation of productive capacity must take a higher priority than the use of resources which will be spent on consumption goods alone, creating balance of payments and other economic and financial problems. As it is, measures already taken by the Government in creating jobs which are not strictly productive have distorted the relationship between work and income to the detriment of future economic development. While, from the social point of view, it is important to spread the incomes created in the society more evenly, it is in the interests of the economic development of the country to increase productive capacity and reduce inequalities of income in the context of increasing overall incomes.

17. This approach represents a more positive response to the problem of unemployment in Mauritius. The problem requires a multipronged attack, and cannot be solved by any system of unemployment relief, particularly as Mauritius does not have the productive capacity to take advantage of the increase in aggregate demand. Measures of ' unemployment relief ' must be considered only in the context of the requirements of the Development Plan. Short-term measures which are inconsistent with the plan strategy must be avoided, if the major objective of planning in Mauritius, full-employment by 1980, is to be achieved.

18. The question of social security and social welfare expenditure is not, however, in Mauritius, simply one of social priorities. Apart from old age pensions, where it is government policy to retire the over-sixties from the labour force and where they must, therefore, where they do not have adequate pensions from their previous employment, be provided with state pensions, the greater part of the economic hardships including those caused by sickness, which the social security and welfare payments are intended to relieve, are caused by the lack of adequate employment opportunities in the economy. Government expenditure to relieve economic hardship through social security or welfare payments competes directly with the possibilities open to Government to finance the creation of employment and incomes among the otherwise unemployed or under-employed and underfed.

19. It will not, therefore, for the more immediate future, be government policy to extend the system of social security payments or to improve the level of such payments until there has been a substantial

improvement in the overall employment situation. That the State has a responsibility, a very real responsibility, for the economic and social welfare of all its citizens, if that State is to have any meaning for its citizens, is fully recognised by Government. The social security system in Mauritius will certainly be further developed. Social security and welfare expenditure results in a net benefit to those groups of the population who need it, but it is not a substitute for what they really need, work and incomes.

(ii) *Retirement Pensions*

20. As part of the strategy of full employment for the entire labour force, it will be government policy to encourage men and women to retire from the labour force at the age of sixty. It will be necessary therefore to make adequate provision in the form of retirement pensions to enable people over the age of sixty to dispense with the need to earn a living. Advice on the general lines of a social security scheme for Mauritius was obtained from the ILO in November 1969. Government accepts that there will be a compulsory social insurance scheme with contributions from employers, employees and from public funds to provide in particular for retirement pensions after the age of sixty. Such a scheme is being prepared and will be introduced in the near future.

CHAPTER XIX

YOUTH PROGRAMME

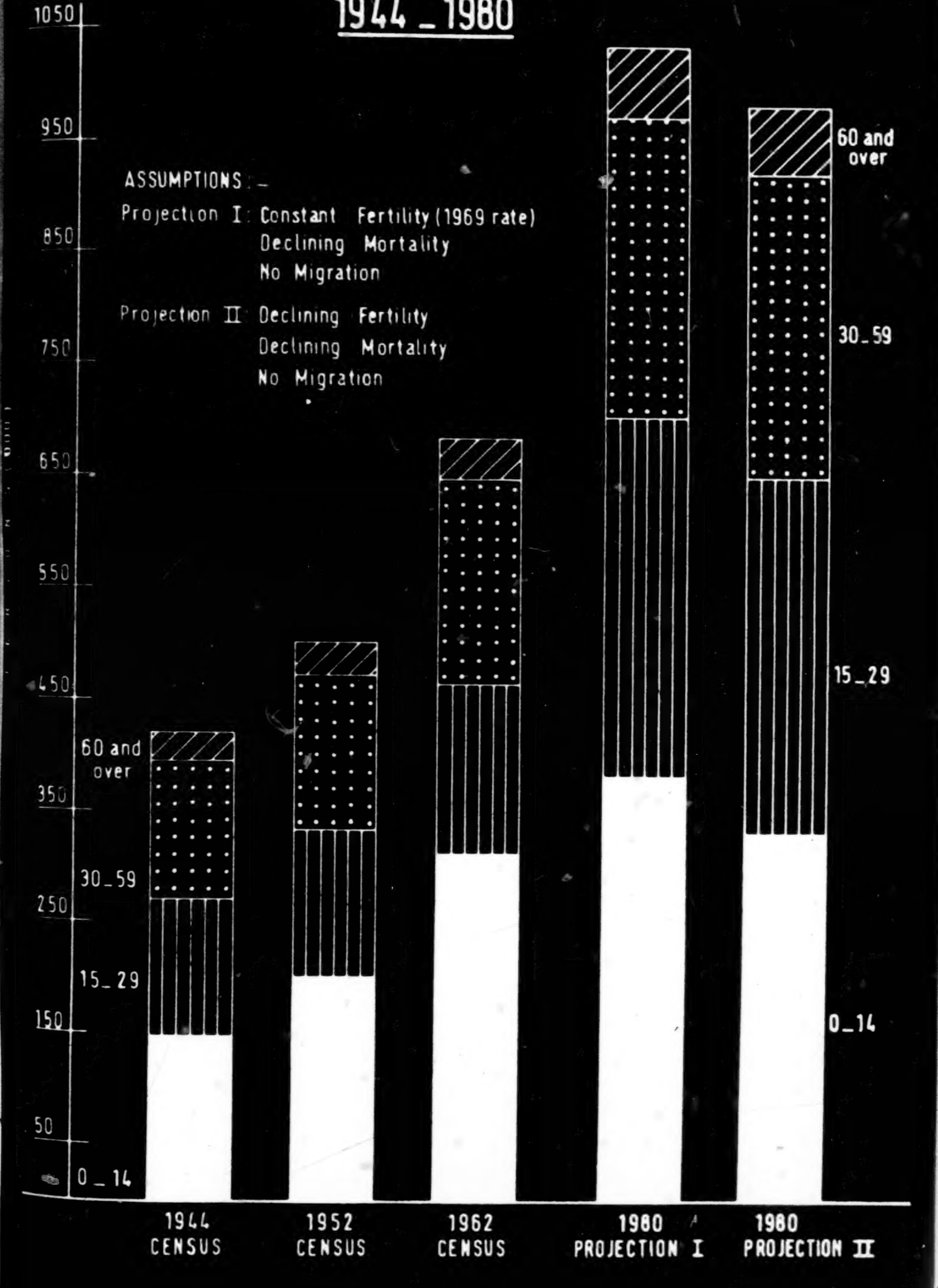
Trends in birth and survival rates over the last 20 years have resulted in marked changes in the age structure of the population in Mauritius. By 1980 about 50 per cent of the labour force will be in the age group 15-29. The young therefore deserve the highest consideration in the formulation of any development programme.

2. The young are a dynamic element in every society, are responsive to change and seek to contribute something towards the advancement of their society, but are often unable to do so owing to lack of opportunities. This combined with the desire for a higher standard of material well-being has created disillusionment and frustration among the young in most developing countries. This unfortunately has come to be known as the ' youth problem '. To call it a problem is in effect a misunderstanding of the need, interests and aspirations of young people. The high percentage of young people in total population should in effect act as a forceful justification for directing development efforts towards the younger sections of the population.

3. In an effort to solve the so-called ' youth problem ', many countries have started youth programmes, emphasizing creation of recreational and sports facilities and some vocational training programmes. While the real importance of developing social and recreational-sports facilities for young people cannot be overestimated, it must be recognized that the provision of such facilities does not in itself, as seems often to have been assumed in the past in many countries, solve what is basically an employment problem. The creation of training facilities whether by extension of formal education or by establishing vocational training of various types also do not solve the problem in itself. The extension of formal education which absorbs larger number for longer periods in the absence of related development programmes merely defers the problem. Again, the vocational training approach in itself assumes that to equip a young man with necessary skills will solve his employment problem. Some such training may be useful so long as some artisan skills are lacking. It would seem uneconomic to create expansive facilities which can rapidly saturate the demand for artisan skills if the economy is not expanding and new job opportunities are not being created. Creation of employment opportunities is imperative. Training programmes must be linked to job creation.

AGE STRUCTURE OF THE POPULATION OF MAURITIUS

1944 _ 1980



4. The needs, intersts and aspirations of the young must be reflected in the development policies and programmes, if they have to have any meaning for them. Development policies and programmes must create a climate for economic opportunities and provide enough productive and gainful employment, including opportunities for self-employment. This means that creation of employment opportunities must become a conscious objective within the development strategy. Such an emphasis alone can bring together all aspects of the problem into a meaningful pattern so that training and job creation re-inforce each other within the whole process of development. Fragmentation of training efforts in vacuum and based on limited perspective cannot be expected to meet the needs and aspirations of the young which constitute the majority of the work force of a nation.

5. The choice of the strategy with emphasis on employment as against the growth of national income *per se*, with complementary policies for the future development of the Mauritius economy, takes due cognizance of the needs and aspirations of the young. The entire development programme is geared to providing employment and resources for the young, the new entrants into the labour force. The labour force of tomorrow will require a better and not just higher education, a higher level of skills and attitudes to work and enterprise suited to the needs of a dynamic economy.

6. Chapter VIII explains how Government will expand and reorientate secondary education, mainly by enabling private initiative in education to develop in the required direction, through capital loans and technical assistance and the training of teachers. The better schools of tomorrow will be those which prepare pupils to obtain reasonably well paid jobs or start successful businesses, not those whch cram their pupils through the School Certificate. To provide the base for this expansion and reorientation at the secondary level, the emphasis in the training of primary school teachers will be on the meaningful mathematics and everyday technology. The emphasis on everyday technology is of fundamental importance not so much from the point of view of creating artisan skills, but more because of its influence on general thinking. For the development to take place successfully and rapidly it is imperative that traditional mystical thinking gives way to scientific and matter of fact thinking based on cause and effect relationship. Introduction to everyday technology will help bridge the tremendous gap that exists between the developed and the underdeveloped. The development process is essentially ' institutional '. The level of material well-being of a country can easily be understood by studying the relative strength of two types of institutions which exist in every society, the technological and the non-technological-mystical. Development means movement from the mystical-non-technological to the technological-scientific way of thinking. The introduction of everyday technology in the Primary Schools will have a tremendous impact on the thinking pattern of the new generation.

7. While the great bulk of the training in specific skills will necessarily take place within industry and other sectors of the economy, there will be a considerable expansion in formal training facilities in all sectors of the economy, the services and the administration, as well as a wider use of facilities abroad for training specialists at various levels.

8. The University of Mauritius will play a major role in the training of practical agriculturalists, technologists, administrators (in both the public and private sectors) and teachers, both as a teaching institution and as a power house of ideas in the formulation and implementation of the national training programme.

9. In order to provide education and training in the right direction a medium-term manpower plan and training programme will be drawn up by specialists in the light of the economic development plan. A career adviser for the young will be appointed in the Ministry of Labour to advise young people in the choice of careers and training.

10. An out-of-school national youth training programme has already started with the establishment of the Youth Training Centre at Arsenal. The Centre imparts basic skills in the cultivation of high value crops and livestock production. Two more Youth Training Farms will be established. This will make possible the training of about 2,000 young people each year in techniques of mixed farming. These young people will, after training, be brought together in mixed farming co-operatives. The facililities at the Sea Training School are also being expanded. Other training programmes in fish pond culture and culture of other economic marine and fresh water creatures, the cultivation of fruit and nut trees, building simple structures, mechanics and crafts will also be started. These programmes will consist of directly productive practical work. Efforts will be made to run the programme at a low cost per trainee. These programmes will eventually embrace a significant proportion of the 16-20 year old who are not in educational institutions or undergoing specific training or already employed.

11. These programmes will, certainly initially, be highly selective, aimed at those young people, initially boys and later also girls, who show promise of leadership qualities, regardless of educational qualifications. Apart from imparting basic skills in one or more of the fields indicated above, the objective of the programme will be to develop individual initiative and group leadership qualities because of financial and organizational constraints and in order to gain experience, these programmes will essentially have to be started on a modest scale.

12. There are already in Mauritius 700 Youth Clubs grouped into six regional federations and the total membership of all youth organizations is over 65,000. The facilities already available for young people will be

further strengthened by the construction of three stadiums in rural areas and the construction of and improvement to sports grounds in the villages under the T-P-T programme. The young themselves will be employed on these projects by the Development Works Corporation. During the plan period the Ministry of Youth and Sports will also create more facilities for the young by building more youth centres and by extension of youth training centres. All these youth facilities will enable the young people of Mauritius, apart from literary and cultural activities, to learn various crafts and trades in mechanical and construction fields. The Development Works Corporation will also provide on the job training as well as use youth facilities to impart other training according to the nature of their development programme.

13. The activities in the youth clubs and centres will be directed under the guidance of experts taking full cognizance of the needs of the young. In the context of the needs of the Youth and the requirements of the Plan it would be important that activities and programmes for the young emphasise learning and appreciating production-oriented behaviour. The demonstration effect of Western consumption standards, leading to demand for more consumer goods and a higher standard of living must be balanced by learning of production-oriented behaviour and by producing more.

14. As the Plan is aimed at providing opportunities for the young, the involvement of the young people in policy-making and plan implementation will be crucial to its success. They must understand fully the Plan and its implications and bring to bear their constructive influence in its implementation and necessary revisions as more experience is gained. Young people must therefore express themselves in national policy-making. They must have an effective voice particularly in the work of implementation. Young people should also be able to express concern for their areas/regions through personal involvement. The establishment of a machinery whereby the young can influence the development of national policies will therefore be necessary. A widely represented non-party National Youth Council will therefore be established. The Council will have access to the Prime Minister and consult with him so that the views of the young on vital national problems are accorded high priority on policy-making. With experience such consultations will be given wider scope to enable young people to participate in the national development effort at all levels.

CHAPTER XX

\ RODRIGUES

The island of Rodrigues lies 600 km. east of Mauritius. It is 15 km. long by 7 km. wide with an area of 10,000 hectares or 25,000 Arpents. The island is of volcanic formation, composed principally of basalt with a little upraised coral at each end. It is hilly throughout, with very little level land. A central ridge, 400 metres high at its culminating point, divides the island longitudinally from the southeast to the northwest for the greater part of its length; from this ridge, spurs, separated by deep ravines, extend to the northern and southern coasts. Annual rainfall is between 1,250 and 1,750 mm. There is a marked dry season with most of the rain falling in the cyclone season between November and May.

2. The island was evacuated by the French in 1803, but a number of families of African, Malagasy and French origin remained behind. Their decendants now number 23,000. Population is increasing at a rate of 1,000 a year.

3. The economy of Rodrigues is one of subsistence farming and fishing, with surplus livestock, onions and garlic and fish and octopodes sold on the Mauritius market.

4. The retail value of Rodrigues produce sold in Mauritius in the four years 1966-1969 was Rs 3.8 million a year:

	Rs Million
Livestock products (of which 75% pork) ...	2.2
Salt fish and octopodes	0.7
Onions and garlic	0.9

5. The value of this produce on the quay at Port Mathurin was Rs 2 million, of which Rs 1.9 million were receipts by producers (less 20 per cent in the case of fishermen hiring boats and nets from traders) and Rs 100,000 were costs incurred by traders and co-operatives in preparing produce for shipment (table 1). The cost of freight of Rodrigues produce is around Rs 200,000 a year. Selling costs in Mauritius for Rodrigues produce, including traders' and retailers' profit margins are around Rs 1.6 million a year.

6. In the four years 1966-1969, Rodrigues imported goods to a landed value of Rs 7 million a year:

	Rs Million
Value of goods at Port Louis excluding duty ...	5.4
Freight	0.6
Customs and excise duties	1.1

7. Of the total value of the goods imported into Rodrigues (including customs and excise duty) food, drink and tobacco accounted for 60 per cent. Food, principally rice, maize, wheat flour, sugar, vegetable oils and dried and evaporated milk, accounted for 40 per cent; drink, mostly fruit wines fermented in Mauritius, for 14 per cent; and cigarettes for 7 per cent (table 2). Of the freight costs, between 20 per cent and 25 per cent are handling and port charges at Port Mathurin and Port Louis and the balance marine freight.

8. The difference between the Rs 7 million a year which Rodrigues pays for its imports and the Rs 2 million which is received by sellers in Rodrigues for produce shipped to Mauritius has been financed by Government expenditure in Rodrigues. Over the five years 1965-1970 this expenditure has amounted to Rs 7 million a year (table 3):

	Rs Million
Social security payments ...	0.6
Salaries of civil servants ...	1.6
Other recurrent expenditure ...	1.6
Cyclone rehabilitation ...	0.8
Capital expenditure ...	2.2
	6.8

9. The difference between the sum of government expenditure in Rodrigues and the value of sales of Rodrigues produce to the island of Mauritius on the one hand and the landed value of imports into Rodrigues on the other hand is explained by direct taxes, rents, license fees, the sale of postage stamps and other government revenue raised in Rodrigues, unrecorded imports into Rodrigues in the form of passengers' baggage, remittances by residents of the Island of Mauritius stationed in Rodrigues and cash savings by local residents.

10. With 2,500 to 3,000 farm families seeking to earn a livelihood from subsistence crop and livestock farming, the land has become seriously eroded, overgrazed and denuded of forest cover. The most urgent and important task in Rodrigues is to restore physically the capacity of the land for crop and livestock production. Because most of the land is on steep slopes, this will require terracing and the construction of drains on most of the arable land with checks drains in the depressions. This work will be carried out at a rate of 1,000 arpents a year, employing 1,200 workers. The reclaimed crop land will be leased to farmers in holdings of 2½ arpents. On the basis of a land capability survey to be carried out in the latter part of 1971, the island will be divided into arable

areas, pastures and areas to be planted and maintained under forest. 90 per cent of Rodrigues is Crown land. Land in private ownership is held in small patches scattered over the island. A rational land use plan which will be prepared, will also include privately owned lands.

11. There are 500 licensed fishing boats in Rodrigues, of which 30 are fishing beyond the reefs. Some 1,200 people earn their living mainly from fishing. Rodrigues has quite an extensive shelf stretching beyond the reefs. The lagoons within the reefs are already heavily fished, but the catch can be considerably increased by going further out to fish. 300 tons of the fish catch is sold in Mauritius (as salted fish) and 350 tons of octopodes are caught each year for sale in Mauritius*. Rodriguan salt fish is the cheapest form of animal protein in Mauritius and has a ready market in Mauritius.

12. It will not be enough, however, to increase the capacity of the island to produce crops and livestock and the capacity to catch fish unless farmers and fishermen also have the incentive to make full use of that capacity. The farmer and fisherman in Rodrigues is at present only receiving half the price at which his produce sells on the retail markets of Mauritius. Only a part of the difference is accounted for by necessary transport and distribution costs. This not only places an additional burden on the Central Government to finance consumption in Rodrigues, and thereby diverts funds which would have been used and should be used to finance development, but also reduces and distorts the incentives to produce crops, livestock and fish for sale for which there is a strong demand in Mauritius.

13. A key factor in the economic development of Rodrigues will, therefore, be the establishment of a strong co-operative, which will sell all Rodrigues produce in Mauritius and ensure that the full retail value of the produce, after deduction of transport and distribution costs, and allowing for reasonable retailers' margins in Mauritius, accrues to the producer.

14. Infrastructure projects to be undertaken in the next four years are principally drinking water supplies, improvements to the harbour at Port Mathurin, an electricity network and further road construction. The possibility of developing tourism in Rodrigues is also being investigated.

15. Equally important as the development of the physical capacity of the island to increase its production for sale and for home consumption, is the development of its technical and managerial capacity and local leadership. Secondary education is still rudimentary with less than 200 pupils attending two church schools which teach up to the School Certificate level. Seven scholarships a year are awarded to Rodriguans to attend secondary schools on the Island of Mauritius. There is a small

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*Local consumption is 160 tons a year

training school for young farmers Both the facilities for post-primary education and training in Rodrigues and the numbers of Rodriguans receiving training in Mauritius and abroad will need to be substantially increased

TABLE I—VALUE OF RODRIGUES PRODUCE SOLD IN MAURITIUS

	Quantity 1966–1969 Average	*Retail value in Mauritius*		*Value at Producer Prices*	
		Unit value	*Total value*	*Unit value*	*Total value*
		Rs	*Rs 000*	*Rs*	*Rs 000*
Livestock	head				
Pigs …	4,715	330	1,530	135	640
Sheep & Goats …	4,185	45	190	36	150
Cattle …	330	500	165	300	100
	dozen				
Fowls …	5,000	65	275	50	250
			2,160		1,140
Marine Produce	tons				
Salt Fish …	145	2,750	400	1,500	220
Octopodes …	85	4,000	340	1,400	120
			740		340
Vegetable Produce					
Onions …	625	1,300	815	600	375
Garlic …	20	3,150	60	1,300	25
Other …	—	—	25	—	20
			900		420
TOTAL …			3,800		1,900

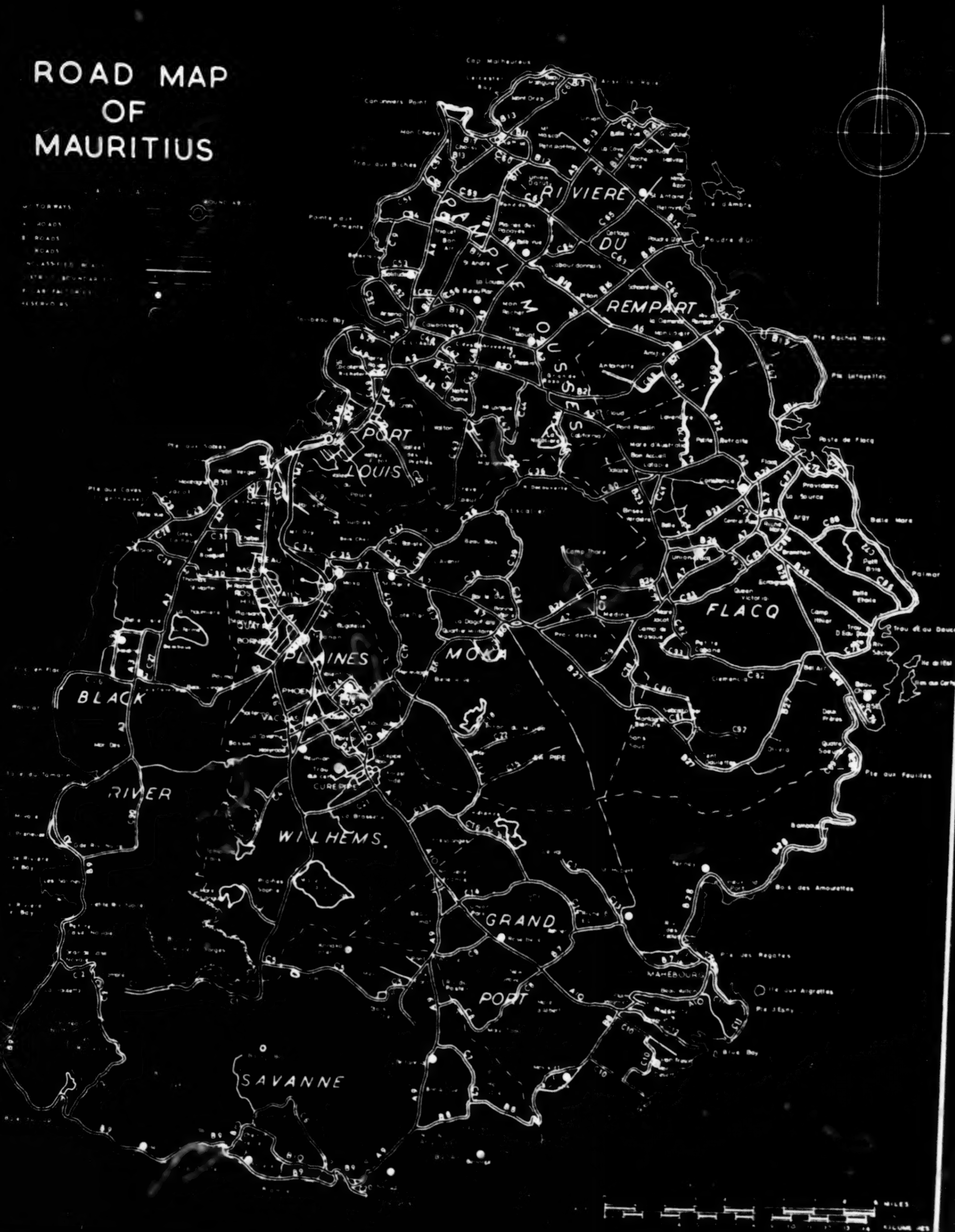
TABLE 2—IMPORTS INTO RODRIGUES, 1966–69 AVERAGE

		Rs Million f.o.b. Port Louis
Food ...	...	... 2.37
of which :		
rice ...	0.89	
maize ...	0.28	
wheat flour	0.25	
sugar ...	0.34	
vegetable oils	0.31	
milk products	0.16	
Drink ...	...	... 0.86
of which :		
beer ...	0.23	
wines ...	0.41	
spirits ...	0.17	
Cigarettes ...	...	... 0.45
Textiles, clothing and footwear ...	...	... 0.62
Households articles	...	... 0.15
Pharmaceuticals	...	... 0.09
Fuels ...	...	... 0.16
Building materials	...	... 0.63
of which :		
sawn lumber	0.12	
cement ...	0.16	
galvanised sheets	0.21	
Transport equipment	...	... 0.16
Other machinery and equipment	...	... 0.33
Other materials and manufactures	...	... 1.29
	TOTAL	... 7.11

TABLE 3—GOVERNMENT EXPENDITURE IN RODRIGUES, 1965–71

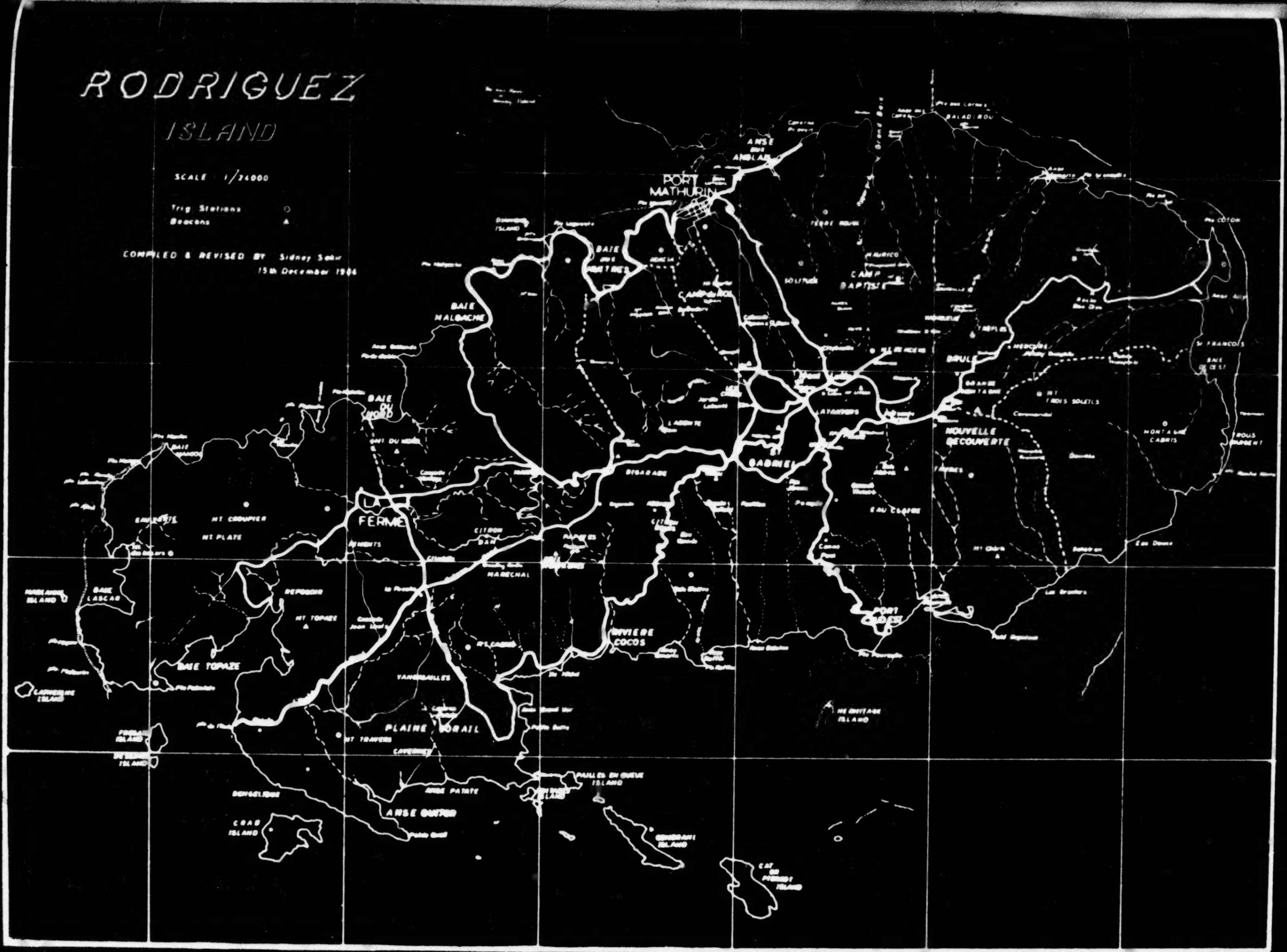
	Rs million					
	1965/66	*1966/67*	*1967/68*	*1968/69*	*1969/70*	*1970/71*
Social Security payments ...	0.61	0.63	0.65	0.60	0.58	0.63
Personal Emoluments of Civil Servants	1.47	1.57	1.62	1.58	1.80	2.06
Other Recurrent Expenditure ...	1.64	1.54	1.50	1.82	1.74	2.17
Cyclone Rehabilitation ...	—	—	1.84	2.36	—	—
Capital Expenditure ...	1.46	2.55	2.41	1.48	2.46	2.87
	5.18	6.29	8.02	7.84	6.58	7.73

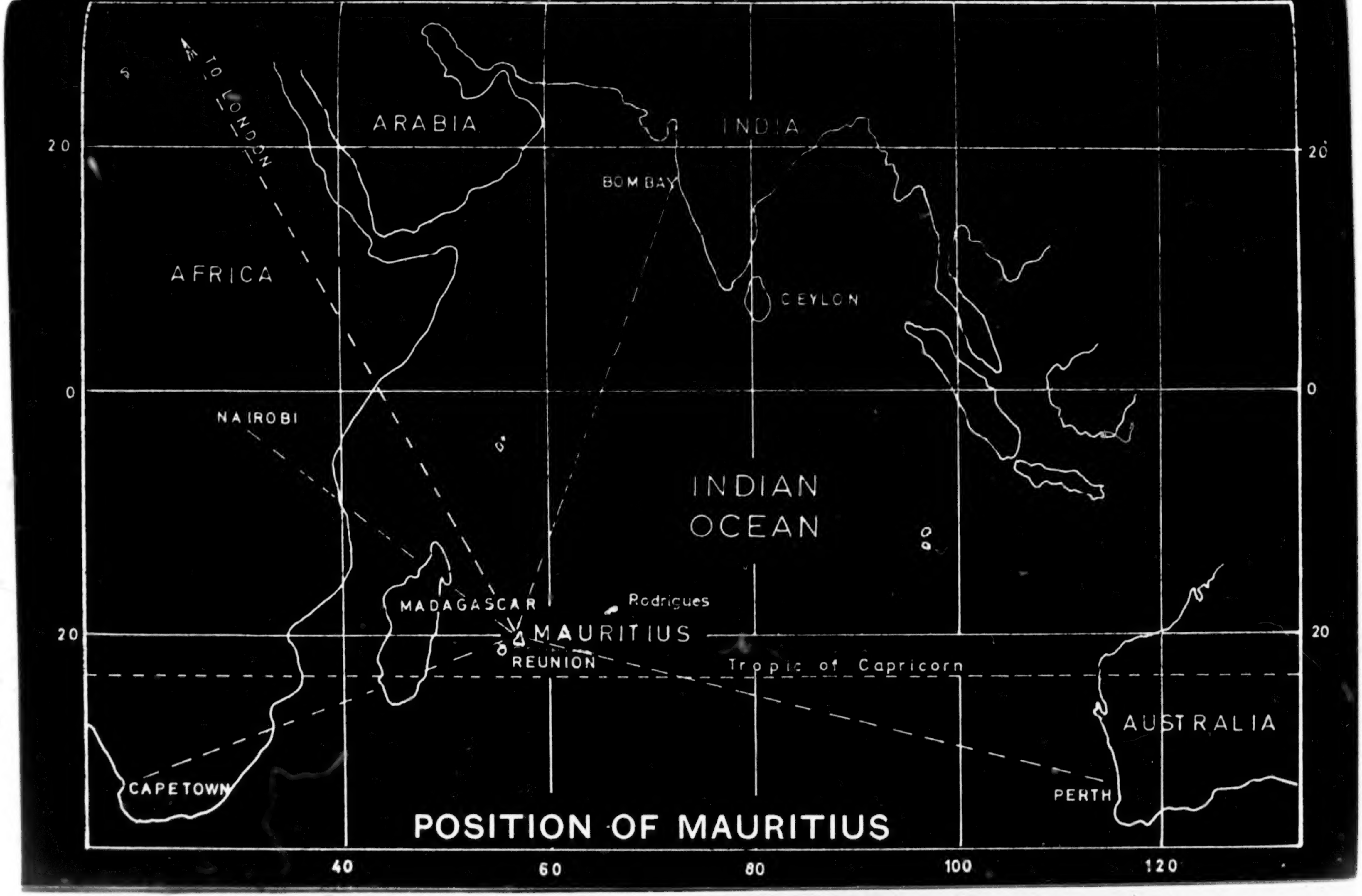
ROAD MAP OF MAURITIUS


MOTORWAYS
A ROADS
B ROADS
ROADS
UNCLASSIFIED ROADS
DISTRICT BOUNDARIES
SUGAR FACTORIES
RESERVOIRS
RIVIERE DU REMPART
PAMPLEMOUSSES
PORT LOUIS
MOKA
FLACQ
BLACK RIVER
PLAINES WILHEMS
GRAND PORT
SAVANNE
ROSE HILL
QUATRE BORNES
PHOENIX
VACOAS
CUREPIPE
MAHEBOURG
MILES
KILOMETRES

MINISTRY OF WORKS

DATE November 1967.


RODRIGUEZ
ISLAND
SCALE : 1/24000
Trig Stations ○
Beacons ▲
COMPILED & REVISED BY Sidney Sakir
15th December 1906
PORT MATHURIN
ANSE AUX ANGLAIS
BALADIROU
BAIE AUX HUITRES
BAIE MALGACHE
BAIE DU NORD
CAMP BAPTISTE
TERRE ROUGE
SOLITUDE
MAURICE
MT LIMON
MT MALARTIC
LA FERME
MT CROUPIER
MT PLATE
BAIE LASCAR
BAIE TOPAZE
MT TOPAZE
REFOSSIRO
MARECHAL
CITRON DAN
DIGARADE
ST GABRIEL
LATANIERS
L'ABONDANCE
BRULE
GRANDE MONTAGNE
MT TROIS SOLEILS
NOUVELLE DECOUVERTE
MONTAGNE CABRIS
ST FRANCOIS
ANSE AUX ANGLAIS
POINTE COTON
EAU CLAIRE
PORT SUD EST
RIVIERE COCOS
PLAINE CORAIL
VANGOUGALLES
MT TRAVERS
ANSE PATATE
ANSE QUITOR
CRAB ISLAND
FREGATE ISLAND
CARRIGRIBE ISLAND
MADELAINE ISLAND
PAILLES EN QUEUE ISLAND
GOMBRANI ISLAND
CAT ISLAND
HERMITAGE ISLAND



POSITION OF MAURITIUS

TO LONDON
ARABIA
INDIA
BOMBAY
AFRICA
CEYLON
NAIROBI
INDIAN
OCEAN
MADAGASCAR
Rodrigues
MAURITIUS
REUNION
Tropic of Capricorn
AUSTRALIA
CAPETOWN
PERTH
20
0
20
40
60
80
100
120

VOL. II

The Programmes and Projects

FUND
FOR RECONSTRUCTION AND DEVELOPMENT

CONVERSION TABLE

1 arpent = 1.043 acres=0.4221 hectare.
1 acre = 0.9588 arpent=0.4047 hectare
1 hectare = 2.4711 acres=2.3692 arpents.
1 cubic metre = 1.308 cubic yards=35.31 cubic feet.
1 Imperial Gallon = 4.546 litres.
1 lb = 0.4536 kilos.
1 kilo = 2.2046 lbs.
1 metric ton = 1000 kilos=0.9842 long ton.
1 long ton = 1.016 metric ton.
1 Mauritian rupee = 0.075 £ sterling.
= 0.18 U.S. dollars.

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INTRODUCTION

Volume I of the Four-Year Development Plan 1971-1975 contains the general analysis of the Mauritius economy and indicates policies to be followed in different sectors for the achievement of the objectives laid down in Chapter II. Chapter V of Volume I gives total anticipated investment that will have to be undertaken during the four year period if the targets set before the nation are to be achieved. Chapter V also indicates the level of investment expected in the Private Sector.

This volume of the Four-Year Development Plan gives detailed description of those programmes and projects which are to be undertaken in the public sector. The projects will be financed through the Government and will be executed by various Ministries and Para-statal organizations. As indicated in Chapter VI of Volume I, many projects have been included in the Plan which are not yet adequately prepared for implementation, and therefore the cost of some of these projects can be expected to change as more information becomes available.

As mentioned in Volume I a total development expenditure of Rs 387 million will be undertaken by the Ministries and Rs 150 million will be spent by the Para-statal organizations on their development programme. The T-P-T programme will cost another Rs 123 million.

CHAPTER 1

MINISTRY OF ECONOMIC PLANNING AND DEVELOPMENT

The Ministry of Economic Planning and Development is in charge of overall planning implementation and of the development and administration of the Central Statistical Office. The Ministry has been allocated Rs 4.0 million over the Plan Period 1971-1975 in order to enable it to undertake various censuses and surveys and to carry out investigations and preliminary project preparation studies up to the point where responsibility for project execution can be handed over to the Ministry concerned.

A. Censuses

2. The population and dwelling census is to be held in two stages, the first being between March to April 1972, to identify the pattern of housing, followed by the population census proper, in June, which will complete or modify the dwelling census. The dwelling census will be concerned with providing detailed information on the type, size and ownership of houses, and the sanitary and water facilities available. The population census will obtain information on the relationship of the members of the household to the head of the household, the nationality, ethnic group, mother tongue, occupation, number of days worked per annum, level of education of members of the household. For women of childbearing age information will be sought on the number of children born, number surviving, the time interval between successive births and duration of present marriage. The Civil Status Office already has information on births and deaths, which are registered with it, so that this information does not have to be collected. For a subsequent study on employment and underemployment, the 1972 Census on population and dwellings, will provide the frame for carrying out a sample survey of the unemployment situation. A National Commission of Census to be formed by representatives from different Ministries is to be established to supervise the execution of the Census. Technical aspects of the Census will be controlled by the Central Statistical Office. It will be their responsibility to work out the final questionnaire and to draw up the district limits of the Census. The latter will also involve the drawing of maps of the districts, giving the approximate number of inhabitants, location of villages and other physi-

cal features, all of which should take approximately six months. An expert in demographic statistics will help the Central Statistical Office with the preparatory work, the carrying out of the Census *per se* and finally with the analysis and processing of the data collected.

3. An Agricultural Census is to be held the following year, in 1972/73, although the exact content and form of the Census has still to be defined.

4. Very little information is currently available on the activities of the distributive and related service and trade establishments in Mauritius. To improve the accuracy of the estimates included in the G.N.P. covering these items it is proposed to undertake a census of distribution. A complete enumeration of all the establishments engaged in wholesale and retail trade and related services will be undertaken during the dwelling census, to be carried out in early 1972. To minimize costs it is planned to undertake a sample survey in 1973/74 to collect information on numbers of persons engaged, wages and salaries, turnover, purchases and stocks, and in the case of large establishments, information on their expenditure on fixed assets.

5. The Consumer Price Index which is now computed by the Central Statistical Office is based on the Family Budget Enquiry which was carried out in 1961/62. As the pattern of consumer's expenditure has changed since then another enquiry will be undertaken in 1972/73 so as to revise the present index base.

B. Surveys

6. Two important surveys are to be carried out under the aegis of the Ministry of Economic Planning and Development in the first year of the Plan, one referring to the future development of Port Louis harbour and the other consisting of an investigation into the potential of the tourist industry in Mauritius.

7. A survey of the port of Port Louis in order to draw up a Master Plan for the harbour is essential at this stage because of the changes in requirements which have already occurred since the last comprehensive study of port activities and facilities was undertaken in 1965, and because of the rapid changes which are expected in the next few years. Since 1965 there has been a marked rise in the number of fishing ships using the harbour and in the number of foreign ships calling at Port Louis for bunkering. With the establishment of the Export Free Zone and the growth of manufacturing industries aimed at the export market, it is anticipated that changes over the next few years will be even more radical. The lay-out and operation of the Port and its vicinity must be developed to allow the efficient handling of cargo at minimum cost and to take the needs of the Industrial Free Zones into account. The survey will be carried out by a firm of consultants who will be asked to investigate the maximum handling capacity, the present rate of utilization and the costs/returns of the present operation of existing facilities in the har-

bour, the increased capacity required for each facility, and the feasibility of establishing new facilities such as dry docks and marine workshops in the light of projections of the estimated pattern and volume of future traffic which will use Port Louis harbour.

8. A staged development plan for Port Louis harbour will then be drawn up, defining the system and siting of facilities required, their timing and an estimate of the associated capital and operational costs of each facility. The Consultants will be asked to suggest a pricing system, and also to advise on staffing requirements and their costs, and the integration with the general administration of the port of customs and police supervision. Since the trend of future industrial development in Mauritius will be towards the production of commodities with a high value/weight ratio, the survey will also encompass a study on whether it would be economic to expand air freight operations and, if so, the appropriate type and capacity of such a service. Finally, the Consultants will be asked to recommend a system of continuous control and revision of the master plan for the harbour. In this connection, investigations will be made into a system of compiling vital statistics of the various port operations such that the data can be computerized. It is estimated that the survey of the harbour will cost Rs 1.0 million to carry out.

9. It is proposed to undertake a tourist market survey in Mauritius in order to determine the existing and potential returns to the economy from the tourist industry. The research will be conducted in three stages, each one of which will be progressively more detailed. In stage I the objective will be to study the possibility of developing particular tourist attractions in Mauritius, given the existence of competitive attractions elsewhere, and to isolate any constraints on their development. Characteristics of the present tourist traffic to Mauritius will be studied alongside with general trends in the pattern and characteristics of international tourist activity and their expected implication in relation to the development of tourism in Mauritius.

10. On the basis of the findings and recommendations of Stage 1, the next step will be to forecast the expected rate of growth of tourists visiting Mauritius to 1980, with a breakdown of their estimated expenditure in order to have an indication of the costs and benefits of the different types of additional investment required in the tourist industry and their effects on the rest of the economy. The Consultants will make recommendations on the administrative, institutional and financial arrangements most suitable for the development envisaged. In the final stage of the survey, research will be carried out on the priority areas of investment, as identified in the previous stage, which will form the basis for detailed recommendations on facility, planning, marketing and promotion strategies required to attract tourists to Mauritius. As each stage of the study is completed, it will be discussed with the Ministry of External Affairs, Tourism and Emigration, Mauritius Government Tourist Office, the

Tourist Advisory Board, the Ministry of Commerce and Industry, the Economic Planning Unit and with any other relevant departments. The estimated cost of the tourist market survey is Rs 56,000.

11. The extent to which Plan projects are ready for financing and implementation varies enormously and in many instances much work remains to be done on preliminary project preparation, further general investigations and feasibility studies. Seeing that projects are thoroughly prepared, and that economic surveys and studies are undertaken at the time required will be an important part of the execution and implementation of the Plan. Therefore, it has been decided that responsibility for preliminary project preparation should rest with the Ministry of Economic Planning and Development and that they should liaise with the executive Ministries and Departments at all times. To this end, it is proposed to establish a Project Evaluation Unit, whose specific function will be to evaluate projects and be involved in their preparation, and also to undertake or commission surveys and investigations. As a measure of the amount of work which remains to be done in this field, if projects are to implemented successfully, a sum of Rs 0.5 million per annum has been earmarked for surveys, investigations and preliminary project preparation over the period 1971-1975.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971-1975

(Rs 000)

	Total Expenditure 1971-1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF ECONOMIC PLANNING AND DEVELOPMENT ...	4,009	2,256	733	520	500
A. Census					
Population and Dwelling Census ...	700	700	—	—	—
Agricultural Census	143	—	143	—	—
Census of Distribution	20	—	—	20	—
Family Budget Survey	90	—	90	—	—
B. Surveys					
Harbour Extension Survey ...	1,000	1,000	—	—	—
Tourist Market Survey	56	56	—	—	—
Investigation and Preliminary Project Preparation	2,000	500	500	500	500

CHAPTER 2

MINISTRY OF WORKS

The Technical Division of the Ministry of Works consists of the Water Development Branch and the Civil Engineering Branch. The functions of the former Branch are the development of the Island's water resources for domestic, industrial and irrigation purposes, to which sewerage is an appendage. This responsibility is shortly to be transferred to the Central Water Authority, a corporation which is currently being set up. However, since the projects which the C.W.A. will be effecting will stem directly from the present Ministry of Works policy, and since the C.W.A. is not yet in existence, these projects have been included under the Ministry of Works heading. The Civil Engineering Branch is concerned with road construction and maintenance, public buildings, and the maintenance of the Ministry's road transport and mechanical plant and equipment.

2. The Ministry of Works has prepared 10 Year Development Plan for the period 1972-1982, which lay down their proposals for the improvement and expansion of the Island's domestic water supplies and also of the sewerage system, and also makes provision for the demands which will be made by industrial consumers of water. The development of water resources for irrigation purposes is currently the joint responsibility of the Ministries of Works and Agriculture and the major programme of new irrigation projects has been included under the plan project section on agriculture. Reference to irrigation projects is made under the relevant section of the Ministry of Agriculture's programme with the exception of three on going irrigation projects.

3. The proposed development of the domestic sewerage system over the coming 10 years is a continuation of a scheme which began in 1958, based on a report by Sir A. Gibb and Partners.

4. Gibb and Partners have prepared a new scheme for the sewering of the proposed industrial sites of Mer Rouge reclaimed area and for the proposed industrial development of Crown land at La Cure.

5. It is estimated that the expansion of the Island's domestic water supplies, will involve a programme of expenditure of Rs 96 million over ten years and the proposed extension of the two existing main sewerage systems to the major urban centres of Mauritius during the period 1972 to 1982 will be at a total capital cost of Rs 93 million. Over the first

phase of the Development Plan 1971/72 to 1974/75 it is proposed to spend Rs 49.1 million on domestic water supply projects and Rs 36.4 million on sewerage projects. These figures will however be reviewed in the light of a new study to be made under technical assistance arrangements.

6. Responsibility for the construction and maintenance of the Island's public roads rest with three different bodies: The Ministry of Works whose jurisdiction extends over motorways, main roads, bridges on and footpaths and drains along such roads, road signs, bus stop and traffic lights and islands; the Municipalities who are concerned with Urban roads and associated footpaths and drains; and the District Councils who look after rural roads, the bridges on and footpaths and drains along such roads

7. The Ministry of Works forecast in broad terms that a continued capital expenditure programme of Rs 200 million should be carried out over the next ten years by the three authorities concerned with roads of which Rs 85 million would be incurred on the construction of new motorways, Rs 45 million on the construction and improvement of main roads, Rs 15 million on the construction and improvement of urban roads, Rs 25 million on the construction and improvement of rural roads, and the remaining Rs 30 million on the other items.

8. The Ministry of Works envisages a capital investment programme in roads under the budget of Rs 30 million over the period 1971-1975. Of this Rs 29 million refers to major projects and the remainder refers to smaller projects, such as the continuing programme of road improvements and reconstruction of bridges. A further Rs 31.5 million is to be spent under the T-P-T programme on roads.

A. Domestic Water Supplies

9. Water for domestic purposes is supplied to approximately 95 per cent of the population, and until a few years ago it was virtually all treated. With the rapid growth in population, however, water which is not satisfactorily treated has had to be brought into the system, for example, from Rivière du Poste. All sections of the water system are now feeling the strain of the demand being placed upon them to a greater or lesser degree, which is a result of both the increase in population and of rising per capita consumption of water. Whereas in 1916 per capita consumption in the rural areas was 15 gallons per day and in the urban areas 27 gallons per day, the corresponding figures today are 30 gallons and 45 gallons. One of the main reasons for this increase was the expansion of the main sewerage system and only small increases in per capita consumption are being planned for over the next ten years.

10. The Ministry of Works has prepared a 10 year plan for the development of water for domestic use. Basically, it is planned to provide satisfactorily treated water to all inhabited parts of the Island and the proposed expansion of the system is based on the assumptions that per capita

consumption in rural areas should increase to 35 gallons and in the urban areas will remain at its present level. In addition, with the expected growth in tourism, allowance must be made for increasing water requirements which will be made by the tourist industry. These are expected to be in the order of 100 gallons per day per tourist. And finally, the planned industrial development of Mauritius can only be made possible if sufficient water is made available for this purpose.

11. Water for domestic purposes is supplied to households by two separate systems one based on Mare-aux-Vacoas which generally speaking supplies the urban areas, and the other based on Piton du Milieu and including the Rivière du Rempart, Galets and Poste, which largely serves the rural areas.

(i) *Mare aux-Vacoas System*

12. The Mare-aux-Vacoas reservoir, situated in Plaines Wilhems, supplies water for domestic, hydro-electric and irrigation purposes. It has a capacity of 975 million gallons and is the largest in the Island. All the capital works which are to be undertaken over the period 1971/72 to 1974/75 concerning water supplies form part of these works which have been determined by the capacity required of the system by 1982, and they have been phased in accordance with what are the most important priorities, i.e. which part of the system is feeling the greatest strain or proving the most serious bottleneck. It is planned to spend Rs 21.9 million on expanding and improving the Mare-aux-Vacoas system over the four years 1971/72 to 1974/75. It is estimated that by 1982, 609,000 people will have to be supplied with water for domestic purposes by the Mare-aux-Vacoas system and assuming that the amount of water drawn off for hydro-electric power and irrigation purposes remains constant, then an increase in offtake of 20-25 per cent must be planned for. The required increase in inflow to the Mare-aux-Vacoas reservoir will be achieved by constructing additional feeder channels to tap water which is at present lost through infiltration or which runs away to sea. It is proposed to spend Rs 0.8 million in constructing feeder channels during the period 1971/72 to 1974/75, to start raising the inflow to the new higher level.

13. It is proposed to create an impounding reservoir to be fed by the Rivière du Poste, water from which has recently been incorporated into the Mare-aux-Vacoas system. An impounding reservoir is one which stores water from a natural catchment area behind a dam. In order to increase the main storage capacity of the Mare-aux-Vacoas system to the required level, work has started on constructing a dam, which will take four years to complete at a cost of Rs 1.7 million. With the completion of this reservoir, the storage capacity of the Mare-aux-Vacoas system will be able to meet the demands made on it by 1982.

14. Water in the Mare-aux-Vacoas system is treated at the La Marie Treatment Works. The rate at which La Marie can filter the water is far below what is required and this is now one of the major bottlenecks of

the system. Therefore, it is planned to increase the capacity of La Marie Treatment Works by 75 per cent, through the addition of six rapid gravity filters in place of the present system of slow sand filters. The total cost of the construction work and the installation of the equipment is Rs 3.5 million.

15. After being treated, water leaves La Marie and flows, via trunk mains to service reservoirs, from where it is then distributed to the consumer via service mains. A continuing programme of trunk mains installations, which involves the laying of large diameter pressure pipes, plus the placing of valves, hydrants etc., will be carried out over the four years at a total cost of Rs 5 million. Their specifications have been determined by the carrying capacity which will be demanded of them in 1982. Similarly, the planned construction of five service reservoirs, which are large covered reinforced concrete tanks, during the period 1971/72 to 1974/75 has been determined by the planned rate of expansion and improvement of the entire Mare-aux-Vacoas system over the ten year Water Development Plan. It is proposed to put up new service reservoirs at Vacoas, Rose Hill, Candos, La Marie and La Brasserie. The cost over four years of this part of the programme is estimated at Rs 8.4 million. It is estimated that expenditure of Rs 3.43 million will be incurred over the next four years for the continuing installation of service mains, which are small diameter pressure pipes plus valves etc., in accordance with the demands of the overall ten year programme. Finally, a sum of Rs 50,000 will be incurred on completion of a pumping station at La Marie and the extension of an electric pump house, also at La Marie in 1971/72.

16. In addition to drawing on surface water sources, the Mare-aux-Vacoas system also draws, but to a much less extent, on ground water supplies. A continuous programme of underground water research is undertaken by the Ministry of Works and when suitable underground water supplies are confirmed, installations are made and the water is pumped after chlorination, into service reservoirs or pumped directly into service mains. Underground water is sufficiently pure not to require all the filtration processes which are necessary for surface water, but simply requires chlorination. Based on the rate at which underground water sources are expected to be located, provision of Rs 2 million for groundwater installations is made over the period of 1971/72 to 1974/75.

(ii) *Piton du Milieu and other Systems*

17. The present capacity of the Piton du Milieu and other systems is 7.6 mgd.* and it is proposed to increase its capacity by 1982 to 20.4 mgd. With the expected growth in population in those areas which draw their water from the Piton du Milieu system to a level of 575,000 in 1982, and the expected increase in per capita consumption from 35 gpd. to 40 gpd.,

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*Million gallons per day.

plus the planned development of tourism, which will mostly take place in those areas served by the Piton du Milieu system, this large expansion of capacity must be planned for. As with the work planned for the Mare-aux-Vacoas system over the period 1971/72 to 1974/75, all works planned for the Piton du Milieu and other systems over this same period have been determined in the light of ten year requirements and priorities, and the work on expanding and improving the system will continue up to 1982. It is planned to spend Rs 20.7 million on capital works to be undertaken in connection with the expansion of the Piton du Milieu and other systems over the period 1971/72 to 1974/75.

18. As a first step, it is planned to increase the inflow into Piton du Milieu reservoir by means of installing more feeder channels, and at the same time to enlarge the reservoir itself: This will involve expenditure of Rs 1.95 million over the period 1971/72 to 1974/75. A further Rs 5.36 million is to be spent on extending the present rapid gravity filter bed system at both the Piton du Milieu and Nicolière Treatment Works, which will result in an expansion of capacity from 4 mgd. to 9 mgd. at the former plant and from 1 mgd. to 2 mgd. at the latter plant.

19. Trunk mains installations and service mains installations, that is the laying of large and small diameter pressure pipes to specifications determined by 1982 requirements, are to be carried out at a total cost of Rs 7.5 million over the period 1971/72 to 1974/75. Five service reservoirs are to be constructed as part of the long-term programme of expanding the storage capacity of the Piton du Milieu system.

(iii) *Port Louis*

20. The water supply system in Port Louis is at present under severe strain, and in order to ameliorate the situation it is proposed to allocate Rs 1.5 million over the Plan Period in order to undertake the capital works necessary to expand the present capacity of the system.

(iv) *General*

21. It is proposed to spend Rs 1.5 million over the next four years on extending the system of water metering to domestic consumers throughout the Island. This is a continuing project—so far approximately 25,000 meters have been installed and it is estimated that between 5,000—6,000 households will be metered each year over the period 1971/72 to 1974/75.

22. And finally, Rs 480,000 is allocated for the purchase of excavating equipment and plant for the Water Section of the Ministry of Works.

B. Industrial Water Supply

23. With the growth of industrial development in the Plaine Lauzun area it is planned to lay pipes from the Port Louis filter beds and to connect Plaine Lauzun to a main water system. Water will also have to be supplied to other small industrial areas. The cost of such pipe installations is expected to be Rs 2.0 million. In addition, it is now necessary to provide

water to the Fort George area, and Rs 740,000 will be provided for the necessary pipe installations, which will connect up with the Mer Rouge area, where industrial development is planned.

C. Research

24. The Ministry of Works carries out a continuous programme of underground water research in order to locate underground water supplies, which are then pumped into service reservoirs to supplement the supply of surface water. A sum of Rs 1.5 million is to be allocated over the coming four years to allow this programme to carry on.

25. An annual expenditure of Rs 100,000 will be incurred in surface water research, which consists of such exercises as the measurement or river flows and the measurement of rates of infiltration of water in particular areas. And finally, a sum of Rs 35,000 per annum will be allocated to other water research, such as research into gauging methods etc.

26. The total expenditure planned by the Ministry of Works on development of the water supply for domestic and industrial purposes over the period 1971/72 to 1974/75 is Rs 53.8 million.

D. Irrigation Water Supplies

27. There are two on-going irrigation projects being carried out by the Ministry of Works. Work is being done on developing La Ferme Irrigation System and on lining the Magenta Canal. Expansion and improvements of Midlands Reservoir will soon be undertaken. Expenditure of Rs 5.635 million will be incurred on these items during the Plan Period.

E. Sewerage

28. There are two major sewerage projects planned for the period 1972 to 1982, both of which are based on recommendations made by Sir A. Gibb and Partners' report on the development of the sewerage system in Mauritius in the mid 1950's with modifications made by later consultants' reports. These two projects are located in Plaines Wilhems and in Port Louis. Provision is also made for the sewering of new industrial areas, mainly in and around Port Louis.

(i) *Domestic Sewerage*

(*a*) PLAINES WILHEMS

29. The main sewer for the Plaines Wilhems sewerage system was laid during the years 1958 to 1963, and in 1963 work on connecting houses to the main sewer was begun. It is being planned to connect 25,000—30,000 households (representing approximately 150,000 people) to the main sewerage system by 1980, so that by that date the townships will all be on the main sewerage system. At present it is proposed that households in the rural areas of Plaines Wilhems, constituting about 55 per cent of the total population in the Plaines Wilhems area will remain on the septic tank system.

30. The work which began in 1963 after work on laying the main sewer was completed and which consist basically of connecting households to the main sewer until the sewer reaches its maximum load carrying capacity is expected to continue until 1976, by which time it will be necessary to lay a second main sewer. The main sewer which is already down will be capable of dealing with 50 per cent of the final expected flow in 1980. Therefore, the work up to 1976 is referred to as stage I and the work from 1976 onwards is named stage II of the Plaines Wilhems Sewerage Scheme. The first stage of this scheme covers part of Curepipe, Phoenix, Rose-Hill and Beau-Bassin but does not cover the lower areas of Beau-Bassin, the outlying areas of Rose-Hill, the major part of Phoenix and the whole of the Vacoas township and the Quatre Bornes townships, plus a quite extensive part of Curepipe. These will come into stage II. The capital cost of the Plaines Wilhems Sewerage Scheme which will be incurred over the period 1971/75 is Rs 11.5 million.

31. It is estimated that Rs 9.2 million will be required for house service connection, which refers to the laying of sewerage pipes from the house to the streets sewer. A further Rs 1.1 million is allowed for the laying of small streets sewers to meet the requirements of urban development. This item is subsumed under the heading, Plaines Wilhems Reticulation. Additional excavation equipment of a value of Rs 500,000 will be required for these two projects. The final capital item to be accounted for in stage I is Rs 700,000 for a sewage treatment plant at St. Martin—it is hoped that it will be possible to treat the sewage and use part of the cleansed sewage for irrigation purposes.

(b) PORT LOUIS

32. The planned development of the sewerage system of Port Louis is basically designed to provide relief to the existing overloaded system. At the moment the sewage from the town drains to the South of Port Louis through one main sewer and is disposed of through a treatment plant known as the Southern Outfall into the sea. A few years ago work was got underway on providing a second point of disposal to the North of the town: the completion of the Northern Outfall is expected in 1971/72 with a final expenditure of Rs 535,000.

33. Although relief will temporarily have been given to the Southern Outfall, it will still be necessary to spend Rs 12.2 million on expanding the capacity of the Southern Outfall. The work designed by Sir A. Gibb and Partners will be put out to two local contracts: One covers the Southern Outfall, Pumping Stations, Treatment Works plus the Caudan Pumping Station and the other consists of the Southern Intercepter, Pouce Valley Sewer System and the Caudan Pumping Main.

34. The other major contract work to be started in 1971 is work on the Plaine Verte sewer, which is an industrial area just to the North of Port Louis, for which sewerage facilities must be provided. This area will be connected to the main Port Louis sewerage system by the beginning of 1973, at a total cost of Rs 2.2 million.

35. There are two small items of capital expenditure to be mentioned to complete the description of the programme underway: firstly, an expenditure of Rs 140,000 for the Plan Period for the extension of the street sewer system in Port Louis, as the town spreads its boundaries, and secondly, Rs 220,000 in 1971/72 which will cover the final cost of connecting the new industrial area of Plaine Lauzun to the main Port Louis Sewerage System. Total expenditure over the period 1971/72 to 1974/75 is estimated to be Rs 15.3 million.

(c) GENERAL

36. It is proposed that Rs 93,000 should be allocated over the next two years to enable several surveys to be carried out. It is felt that consulting engineers should be commissioned to prepare schemes for the sewering of the proposed industrial sites of the Mer Rouge reclaimed area and for the proposed industrial development of Crown land at La Cure. Also, during 1971/72, the necessary surveys for the design of the sewerage scheme for the stage II of the Plaines Wilhems scheme should be undertaken. In this connection, it is also planned to carry out a survey so as to determine what are the precise boundaries of the areas to be sewered in stage I of the Plaines Wilhems Sewerage Scheme.

37. A sum of Rs 1.0 million will be spent over the four years 1971/72 to 1974/75 in order to improve the present sewerage system on the various Central Housing Authority estates.

(d) SEWERAGE OF INDUSTRIAL ESTATES IN THE ENVIRONS OF PORT LOUIS

38. It is planned to allocate Rs 8.0 million over the next four years in order to sewer the proposed new major industrial estates and two housing estates in the environs of Port Louis and Rs 500,000 for the sewering of various proposed small industrial sites in other areas. Apart from the sewage from the small industrial areas the sewage will all flow to the Port Louis Northern Treatment Works, which have been designed for staged development, with allowance made for the future duplication of the screening units, the addition of extra pumps, and the construction of a second main pumping outfall. In two years time the present treatment works will have reached full capacity and in order to allow for the connection of the new areas there will have to be a second screening plant installed, a third pump installed and the construction of a second outfall to the sea. It is estimated that the cost of these works will be in the order of Rs 2.5 million.

39. It is intended to lay a main branch sewer from the Northern Treatment Works to the proposed new industrial estate at La Cure, plus several branch sewers. Since flow from the industrial area would initially be small, the flow from La Cure Housing Estate would also be discharged into the trunk sewer, instead of into the Latanier River, as occurs at present. The estimated capital costs of the necessary works is Rs 4.5 million, of which Rs 3.0 million will be incurred during the Plan Period.

40. Sewerage of both the existing reclaimed area of Mer Rouge and also of the presently unreclaimed area is to be carried out by laying trunk and branch sewers and by constructing additional pumping stations, at a total cost of Rs 5.0 million, of which half the work will be carried out during the Plan Period.

41. At present sewerage from Roche Bois Housing Estate is drained to a pumping station from whence it is pumped across Mer Rouge to the sea. It is now planned to build a new pumping station of greater capacity to serve the Roche Bois area, together with adjacent areas of Mer Rouge. The station would pump the sewage into one of the new trunk sewers from where it would flow into the expanded Northern Treament Works. The estimated cost of the planned sewerage works to serve the Roche Bois area is Rs 2.0 million, of which Rs 1.0 million will be incurred in the Plan Period.

42. Detailed design work and the preparation of contract documents will be undertaken in the next two years and the actual construction work will be carried out over the subsequent two years.

43. Finally, a sum of Rs 500,000 has been earmarked for the sewering of various small industrial areas, such as Coromandel, lower Beau Bassin and Quatre Bornes and an industrial site in Vacoas/Phoenix, which are to be developed over the Plan Period. They will each be connected to the nearest main sewerage system.

F. Roads

(i) MAJOR ROADS

44. It is proposed to construct three motorways during the next four years, the Southern Entrance Road to Port Louis, the Northern Entrance Road to Port Louis and an Airport Access Road. Work has already begun on constructing a second carriageway along the Southern Entrance Road into Port Louis and the project will be completed in the second year of the Plan. The dual carriageway stretch will then be 9.5 miles long and will greatly facilitate the flow of traffic into and out from Port Louis to the South.

45. The Northern Entrance Road will run from Terre Rouge to Harbour Square in Port Louis and will be a dual carriage motorway each 24 feet wide. The first and second year will be taken up by an engineering survey, detailed designing, and the preparation of contract documents, and it is expected that construction should get underway and be completed during the third and fourth year of the Plan. It is estimated that the road excluding Rs 7.5 million compensation payments will cost Rs 9.5 million to construct.

46. Lastly, it is proposed to make provision for the construction of an Airport Access Road, although until it is known whether the existing airport at Plaisance is to be expanded or whether a new airport is to be developed in the North of the Island, it is only possible to give rough

estimate of costs. The access road will be built to dual carriageway standards, each motorway to be 24 feet wide, and a sum of Rs 6.0 million has been earmarked for the detailed designing, engineering survey and preparation of contract documents which is expected to take three years to complete plus Rs 10.0 million for actual construction work in the remainder of the Plan Period.

47. The total project value is estimated at Rs 50.0 million.

(ii) MINOR ROAD WORKS

48. The projects listed under the minor road works section consist of resurfacing, widening of, and improvement of curves on main roads; the construction of pavements at places where traffic hazards are great, and the reconstruction of bridges which have become unsuitable for the present traffic. The total cost of these minor improvements over the Plan Period is expected to be Rs 8.4 million. A major part of these works will be undertaken by the Development Works Corporation. A provision of Rs 1 million has however been made under the vote of the Ministry.

G. Public Works

49. The Ministry of Works is responsible for carrying out alterations and renovations to existing Government buildings and a sum of Rs 250,000 per annum over the next four years has been allocated for expenditure on items which fall under this heading. It is estimated that orders to a value of Rs 1.5 million for vehicles and plant must be placed so that these works can be carried out. The last three items of expenditure under Public Works are Rs 180,000 for the erection of a shed in Plaine Lauzun, Rs 175,000 for the construction of a motor vehicle examination centre and Rs 19,000 for the completion of staff headquarters.

SUMMARY

Ministry of Works

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

		Total Expenditure 1971–1975	*Phasing of Expenditure*			
			1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF WORKS	...	129,017	33,172	28,632	35,187	32,026
Water Supply	...	59,485	15,506	16,464	15.339	12,176
Domestic						
Mare-aux-Vacoas	...	24,880	6.079	6,575	6,676	5,550
Piton du Milieu	...	20,710	4,475	5,240	6,288	4,707
Port Louis	...	1.500	250	250	500	500
General	...	1,980	590	460	494	436
Industrial Water Supply	...	2,740	1,145	695	400	500
Water and Other Research	...	2,040	595	481	481	483
Irrigation	...	5.635	2,372	2,763	500	—
Sewerage	...	36,355	11.893	8,964	10.748	4,750
Domestic						
Port Louis Sewerage Scheme	...	15.262	8,440	5,124	1,648	50
Plaines Wilhems Sewerage Scheme		11,500	2,950	3,150	2,850	2,550
Industrial						
Sewerage of Industrial Estates	...	8.000	250	250	5.500	2,000
Sewerage Small Industrial Areas		500	—	250	250	—
Others	...	1,093	253	190	500	150
Roads	...	30,303	5,174	2,629	8,250	14,250
Major Roads						
Southern Entrance Road to Port Louis ...	...	3,803	3 424	379	—	—
Northern Entrance Road to Port Louis ...	...	9,500	500	1,000	4,000	4,000
Airport Access Road	...	16,000	1,000	1,000	4,000	10.000
Minor Roads Works	...	1,000	250	250	250	250
Other Public Works	...	2,874	599	575	850	850

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
WATER SUPPLY					
DOMESTIC WATER SUPPLY					
Mare aux Vacoas ...	24,880	6,079	6,575	6,676	5,550
Feeder Channels	800	200	200	200	200
Impounding Reservoirs ...	1,700	200	500	500	500
Treatment Works	3,500	408	2,000	796	296
Trunk Mains	5,000	1,270	1,000	1,730	1,000
Service Reservoirs	8,400	2,035	1,800	2,200	2,365
Service Mains	3,430	1,276	750	750	654
Underground Water Installations ...	2,000	640	325	500	535
Pumping Station	50	50	—	—	—
Piton du Milieu ...	20,710	4,475	5,240	6,288	4,707
Feeder Channels	350	—	—	150	200
Impounding Reservoirs ...	1,600	50	300	500	750
Treatment Works	5,360	376	2,000	2,000	984
Trunk Mains	5,000	1,675	1,000	1,500	825
Service Reservoirs	3,900	1,024	800	938	1,138
Service Mains	2,500	790	700	700	310
Underground Water Installations ...	2,000	560	440	500	500
Port Louis ...	1,500	250	250	500	500
General	1,980	590	460	494	436
Water Meters and Protective Chambers	1,500	375	380	380	365
Equipment and Plants	480	215	80	114	71
Idustrial Water Supply ...	2,740	1,145	695	400	500
Water Supply to Fort George/Mer Rouge	740	545	195	—	—
Water Supply to Plaine Lauzun/Port Louis and other small industrial areas	2,000	600	500	400	500
Water and Other Research ...	2,040	595	481	481	483
Underground Water Research ...	1,500	460	346	346	348
Surface Water Research ...	400	100	100	100	100
Other Research	140	35	35	35	35

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
Irrigation	5,635	2,372	2,763	500	—
Development La Ferme Irrigation system	820	320	250	250	—
Lining Magenta Canal	552	52	250	250	—
Midlands Reservoir	4,263	2,000	2,263	—	—
SEWERAGE					
Port Louis Sewerage Scheme	15,262	8,440	5,124	1,648	50
Southern Outfall	12,174	5,780	4,796	1,598	—
Northern Outfall	535	535	—	—	—
Plaine Verte Sewer	2,193	1,885	308	—	—
Extension of Street Sewer System	140	20	20	50	50
Sewerage Reticulation—Plaine Lauzun	220	220	—	—	—
Plaines Wilhems Sewerage Scheme	11,500	2,950	3,150	2,850	3,550
House Service connections	9,200	2,300	2,300	2,300	2,300
Reticulation	1,100	400	500	200	—
Equipments	500	150	150	150	50
Sewage disposal	700	100	200	200	200
Industrial Sewerage Scheme	8,500	250	500	5,750	2,000
Sewerage of Industrial Estates	8,000	250	250	5,500	2,000
Sewerage of Small Industrial Areas (Lower Beau Bassin, Coromandel and Quatre Bornes)	500	—	250	250	—
Other Sewerage Schemes	1,093	253	190	500	150
Sewerage Scheme Survey	93	53	40	—	—
Improvements of Sewerage System on C.H.A. Estates	1,000	200	150	500	150

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs. 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
ROADS	30,303	5,174	2,629	8,250	14,250
Main Roads	29,303	4,924	2,379	8,000	14,000
Northern Entrance Road to Port-Louis	9,500	500	1,000	4,000	4,000
Airport Access Road	16,000	1,000	1,000	4,000	10,000
Southern Entrance Road to Port-Louis	3,803	3,424	379		
Minor Roads Works ...	1,000	250	250	250	250
General Works	1,000	250	250	250	250
OTHER PUBLIC WORKS ...	2,874	599	575	850	850
Motor Vehicle Examination Centre	175	50	125		—
Staff Quarters	19	19	—	—	—
Vehicles and Plants	1,500	100	200	600	600
Minor Works	1,000	250	250	250	250
New Shed, Plaine Lauzun ...	180	180	—	—	—

CHAPTER 3

MINISTRY OF COMMUNICATIONS

The Ministry of Communications has five major sections, each of which has drawn up a planned capital investment programme over the period 1971/72 to 1979/80. These five sections comprise civil aviation, marine services, telecommunications, meteorology and posts and telegraphs. The Ministry of Communications estimates that it will undertake an investment programme to a total value of Rs 257 million over the period 1971/72 to 1979/80 of which it anticipates carrying out approximately 46 per cent, or Rs 118 million, in the first four years. Out of this amount a small proportion of Rs 340,000 will fall under the T-P-T programme which is to be responsible for the construction of seven post offices, under the programme prepared initially by the Department of Posts and Telegraphs.

A. Civil Aviation

2. The administration and operation of the airport comes under the Civil Aviation Department of the Ministry of Communications. Pending the decision about the location of the Air Port, no detailed projects, for the development of airport facilities in Mauritius over the first phase of the Plan Period have yet been prepared. However, in anticipation of the order of magnitude of expenditure which would be incurred, which would be roughly similar, whether it was decided to extend the present Plaisance Airport or to site a new airport in the North of the Island, which are the two alternatives, a sum of Rs 41 million has been estimated by the Civil Aviation Department as being the sort of sum which will be incurred on airport construction during the period 1971/72 to 1974/75.

3. During the first two years of the Plan Period the Civil Aviation Department plans to spend Rs 647,000 on improving facilities at Plaisance Airport, which are imperative, for example radio and control equipment, vehicles and equipment, garages etc.

B. Marine Services

4. The Marine Services Department of the Ministry of Communications is responsible for the administration of the Port of Port Louis, the one commercial port in Mauritius. Pending the drawing up of a Master Plan

for the future development of the harbour, for which Technical Assistance has been requested, a programme for the expansion of those harbour facilities which are urgently and immediately required has been prepared by Marine Services. Detailed projects have been prepared for the first phase of the Plan Period, based on these pressing priorities, with detailed capital phasing, and rough estimates of overall capital expenditure for the second half of the 1970's have been made. Marine Services envisage a capital investment programme approximating Rs 133 million over the period 1971/72 to 1979/80 and have prepared projects for the first phase of the Plan Period which will cost Rs 55 million to be carried out. Consideration will also be given during the Plan Period to the development of Port Sud Est.

(i) *Major Capital Works*

(a) QUAY DEVELOPMENT

5. At present there is only one deep water quay in Port Louis: Quay D, which has a length of 485 feet, although a new deep water Quay, West Quay, is under construction and will be completed in October 1971. Even with the completion of this second Quay, deep water cargo handling facilities will be barely sufficient for the amount of traffic which has to be catered for. It is therefore proposed to extend this new quay to a length of 800 feet and to construct a further 400 feet of deep water quays over the period 1971/72 to 1974/75. With this programme of quay development a further 80,000 tons of annual capacity would be added in terms of general cargo handling. This compares with 170,000 tons of general cargo (excluding tanker bulk and bagged cargo) which was handled at the port in 1970. The capital cost of extending the West Quay is Rs 10 million and the estimated cost of further deep water quay construction is Rs 6 million, giving a total cost for quay development of Rs 16 million over the next four years.

6. The extension of West Quay, will be completed by 1973/74 by which time it is hoped that comprehensive survey of the harbour will have been carried out. It is only possible, prior to the conclusions and recommendations of such a survey to give rough estimates of future expected expenditure on quay development. At this stage a provisional figure of Rs 60 million to increase cargo handling facilities over the period 1975-1980 to a level commensurate with that which will be required by 1980 has been suggested.

7. The closure of the Suez Canal brought about an increase in bunkering traffic calling at Port Louis. One of the specific functions of the West Quay will be to accommodate ships discharging white oils and to provide bunkering facilities, since it will provide the necessary deep water berth facilities. This will be a major expansion of such facilities offered by Port Louis and will make it possible to attract more traffic. This aspect of the development of harbour facilities i.e. to attract traffic

is important, since over the last three years 1968-1970 an average 1,250 foreign vessels called at Port Louis each year, of which 500 were fishing vessels, 400 were vessels loading or unloading cargo and 350 called for bunkers and other provisions of services. Therefore, the planned development of the harbour will make provision for the expansion of facilities to enable these revenue-earning services to be provided on a competitive basis.

(b) *Harbour Reclamation, Retaining Wall and Diversion of Latanier River*

8. The reclamation of Mer Rouge was begun in 1963 under the supervision of Marine Services and to date approximately 50 acres have been reclaimed. Given the capacity of the dredging equipment operated by Marine Services, it would take another 20 years to reclaim the whole of the Mer Rouge area, which is about 250 acres. To purchase an additional dredger would be very expensive, just for this one operation, and so it is proposed to put the work out to contact, in order to get the work finished the quickest, cheapest way. It is estimated that the capital cost of reclaiming Mer Rouge will be Rs 10 million for 3 million cubic yards.

9. Retaining walls will be built around the reclaimed area of Mer Rouge in order to prevent the spoil from being pumped into the sea and to contain the dredge spoil in the reclamation area. The construction of a retaining wall is a very labour-intensive task and it is being considered whether this work would be suitable for inclusion under the T-P-T programme. A sum of Rs 1.0 million has been allocated for this item.

10. The Latanier stream at present flows into Mer Rouge and will have to be diverted. It is planned to divert the river to the south of the Mer Rouge area so that it will flow into the harbour. The necessary capital works are estimated to cost Rs 3.0 million. It is planned to complete the reclamation of Mer Rouge and associated work by the end of 1974/75.

(c) *Approach Roads and Sewerage Facilities*

11. The Chaussée Tromelin is the only road which leads to the Mer Rouge area. In anticipation of the demands which will be made by the Mer Rouge area with the spread of industrial activity there, provision is made for the construction of a double carriageway from Fort George, near West Quay, which will join up with the main road entering Port Louis from the North. The road will be approximately 3,000 feet in length and 50 feet wide and is estimated to cost Rs 1.5 million. It is planned to construct the approach road over the period 1971/72 to 1974/75, from which service roads into the industrial site area can be built as and when necessary. Provision has been made in order that the reclaimed Mer Rouge area may be connected to the main Port Louis Sewerage system; this will be carried out by the Ministry of Works and has been included in its programme of plan projects for the period 1971-1975.

(d) *General Improvement to Harbour and Quay Facilities*

12. A further Rs 15.4 million is to be spent over the first phase of the Plan on carrying out a range of general improvement to the facilities provided by the port. An immediate need is to improve the visibility of the existing range lights and light buoys, which are situated in the harbour and in the approaches to the harbour and which are meant to guide vessels entering the harbour after dark so that they may make a safe anchorage. The existing range lights and buoys are being obscured by the lights of the town. It is therefore proposed to install new lights and buoys in more prominent positions where they will be clearly visible to vessels wishing to enter the harbour at nightfall. The cost of this undertaking is estimated at Rs 75,000 and the necessary work will be finished in 1971/72.

13. It is proposed to equip the West Quay, as soon as it is completed in October 1971 with two mobile cranes for the handling of cargo, and a lorry mounted heavy lift crane which will also be made available for general port use. Improvements to the granary will be effected in the form of more efficient elevators to carry the grain and a new cargo shed measuring 500 × 250 feet will be constructed for the storage of goods in 1971/72. The total cost of these items of capital expenditure is expected to be Rs 5.5 million.

14. It has become necessary to carry out repairs to the existing harbour workshop and crane garage which at present becomes flooded during heavy rainfall, causing damage to plant being stored there. There is insufficient storage accommodation at present to house the two new cranes which are to be purchased for the West Quay, therefore it is proposed to construct additional sheds for this purpose. The cost of these items is estimated at Rs 300,000.

15. Four patent mooring buoys are to be purchased at a cost of Rs 275,000 which are needed to maintain the stream berths during cargo handling operations.

16. And finally, it is proposed to construct a provisional passenger terminal in Port Louis harbour. With the increasing number of passenger ships which are calling at Port Louis it is not felt possible to wait several years for the construction of a permanent terminal. The permanent terminal will be included in the overall development plan of the harbour. The provisional terminal will be erected in 1971/72 at an estimated cost of Rs 100,000.

(e) *Survey*

17. A survey for the comprehensive development of Port Louis harbour is of vital importance to Mauritius. The pattern of trade in Port Louis harbour has changed considerably over the last decade and the volume

of traffic has risen markedly with the rise of bunkering and fishing activities. With the establishment of the Export Free Zones and the growth of manufacturing industries geared to the export markets, it is anticipated that the changes in the present decade will be even more radical.

18. The development of Port Louis harbour is key to the general development of the economy and its efficient functioning will affect not only the expansion of the fishing and ship-building industries and the growth of bunkering i.e. the growth of demand for services by foreign ships, but also will benefit Mauritius established export industries such as sugar and will have a vital influence on the success of industrial development under the Export Free Zone programme.

19. A survey of Port Louis harbour will therefore be undertaken in the very near future by consultants. The cost of the survey and responsibility for its supervision are to be met by the Ministry of Economic Planning and Development.

(f) *Storage Facilities for Imported Cereals and Food Aid Supplies*

20. It is proposed to construct on a site to be chosen later a warehouse of 100,000 sq. ft. for the storage of cereals imported by the Government and for food aid received from external sources. The present granary building is utilized mainly for the storage of rice. Flour imported by the Government is stored at the New Mauritius Dock for which a substantial rent is paid yearly. Other food aid commodities are stored in various warehouses scattered in many parts of Port Louis and shortage of space for the storage of these goods poses considerable problems to the Department of Supplies. It is therefore proposed to provide a warehouse so as to centralise the Government Storage facilities, and so minimize the work involved. It is estimated that a warehouse designed for this purpose would cost Rs 4 million.

(ii) *Harbour Craft and Equipment*

(a) TUGS

21. It is planned to spend Rs 510,000 on improving the performance of the tugs which operate in Port Louis harbour. The tug, Le Corsaire, will have a more powerful bow thruster installed and will also be equipped with additional salvage gear, at a cost of Rs 250,000 for the former item and Rs 48,000 for the latter item. It is further proposed to spend Rs 22,000 on the purchase of a stock of tow ropes and spares to be kept in reserve for Le Corsaire, to replace those which are damaged during salvage operations. These items will be purchased during 1971/72. The

renewal of the tugs radio equipment has become necessary with the coming into force of the new international regulations relating to the change over from a double side to a single side band. Therefore, Le Corsaire is to be fitted out with new radio equipment consisting of one transmitter, one receiver plus emergency equipment at a cost of Rs 130,000. Le Corsaire is a powerful tug capable of extensive salvage work over a large area of the Indian Ocean, while the other two tugs which are used in the harbour and for which expenditure is planned are much older and are now used only on harbour or limited operations. Therefore, radio equipment for them will be ordered in accordance with the minimum requirements of the safety regulations at a total cost of Rs 60,000 for both tugs. These two tugs are becoming increasingly expensive to maintain and it is also becoming very difficult to purchase the necessary spare parts, since the tugs are almost twenty years old. Therefore, provision of Rs 2.5 million is made for the purchase of a new tug in 1974/75.

(b) SHIP/SHORE RADIO EQUIPMENT

22. The Government Radio Coast Station, operated by Marine Services is equipped to provide only a limited shop/shore radio communication service, since it communicates only on a medium frequency band. H.M.S. Mauritius which operates on a high frequency band, can be called on by Marine Services, but this is a voluntary arrangement and the service can only be extended to British and Commonwealth ships. It is obvious that a better and more efficient service is needed, and under a single control. It is proposed to equip Marine Services with the necessary additional radio equipment and to relocate the Government Radio Coast Station where the conditions for radio transmission are more suitable than on the present site. The installation of VHF equipment will enable the ship/shore radio communication service to be extended over a much greater distance, will provide radio communication to and from fishing vessels registered in Mauritius, which are almost exclusively equipped with radio apparatus operating in the high frequency band and lastly will allow contact with ships of all nationalities.

23. It is planned to hand over this more efficient Government Radio Coast Station to the Department of Telecommunications as soon as it is established in the new building. It will then be amalgamated with the Mauritius Radio Station and be run as a commercial service, instead of as a non-commercial service as at present.

24. The cost of the necessary equipment which will be acquired in 1972/73 has been estimated at Rs 400,000. The cost of putting up a new building on a more suitable site falls under the budget of the Department of Telecommunications.

25. It is also proposed to equip Marine Services with a portable VHF radio for use in the harbour only. A balance of Rs 16,454 remains to be paid.

(iii) *Projects not Related to Port Louis Harbour*

26. Due to the unsuitable location of the battery room in Cave Points Lighthouse, the batteries are subjected to excessive exposure to salt spray, which considerably shortens their working life, therefore, it is proposed to re-site the battery room. The equipment has now to be replaced. In order to re-site and re-equip the battery room a sum of Rs 45,000 has been allocated. It is also planned to convert the electricity supply to shore power and provide a standby diesel driven generator in the lighthouse, which would provide a more reliable power supply and also be more economical to operate. The Central Electricity Board is to carry out the necessary capital work, and Marine Services will make a contribution of Rs 45,000.

27. The jetty at Flat Island was damaged two years ago and it is planned to construct a new jetty there at an estimated cost of Rs 30,000.

C. Telecommunications

28. The Telecommunicaions Section of the Ministry is at present responsible for the operation and maintenance of the telephone and telex service in Mauritius. It is now proposed to extend its functions to providing telephone and telex services between Mauritius and Rodrigues and to providing a ship/shore radio service. In order to carry out its planned investment, expenditure of Rs 19.4 million will be incurred over the period 1971/72—1974/75 and a total of Rs 39.5 million by the end of the 1970's.

(i) *Improvements to Main Exchanges*

29. Extensive investments are to be carried out to the Floreal, Port Louis and Rose-Hill telephone exchanges.

30. It is planned to spend Rs 8.4 million over the next four years to construct and equip a new automatic telephone exchange in Floreal, to replace two very overloaded manual exchanges at Vacoas and Curepipe. These two manual exchanges serve the densely populated areas of Vacoas/Phoenix and Floreal/Curepipe. The first exchange is 30 years old and the other is 40 years old and their maintenance has become increasingly difficult and costly since spare parts for such old exchanges are no longer manufactured. The exchanges are designed to a maximum capacity of only 1,200 and 2,000 lines respectively, which is far below that required. Their operation has therefore become increasingly difficult also and has led to a much poorer level of service to subscribers in the form of long delays etc., as compared with the standard of service given by the automatic system on the rest of the Island. It is proposed therefore

to install an automatic exchange at Floreal which will have a capaciy of 5,000 lines, with possible expansion facilities.

31. The Port Louis exchange has to deal with a 7 per cent growth rate of calls each year, at which rate the present capacity of the exchange, which is 4,500 lines will be taken up by June 1972. Taking into account the planned increase in industrial and commercial activity in the Port-Louis area over the next few years, with the establishment of the Export Free Zone, it is planned to extend the present exchange and install 3,000 more lines which will be Extensions Number 2 and 3 to be operative by 1975. The cost of this programme is estimated at Rs 4.5 million.

32. The number of calls dealt with by the Rose-Hill Exchange are growing at a rate of 4 per cent per annum and it is estimated that 200-300 additional lines will be needed each year. The present Extension Number 2 will be operating at full capacity by 1973 and it is planned to install Extension Number 3 by 1973. The existing building will have to be extended in 1971/72. It is estimated that the construction work required and the additional equipment to be purchased in order to increase the capacity of the Rose Hill Exchange will be Rs 1.8 million.

33. Further investments to all the three main telephone exchanges are envisaged over the second phase of the Plan, in order to cope with the increasing demands being made on the telephone service.

(ii) *Improvements to Rural Exchanges*

34. It is planned to spend Rs 1.2 million over the period 1971/72 to 1974/75 in order to improve and extend the present rural exchange system. It is proposed to install rural exchanges by the end of 1973/74 in four areas which at present are not connected to the telephone system: in Cap Malheureux, Bambous, Camp de Masque and Case Noyale. The total estimated cost of these installations is Rs 308,000.

35. Replacement of switching equipment has to be made at eight rural exchanges where the present equipment is obsolete. The exchanges concerned are at Long Mountain, Rivière du Rempart, Nouvelle France, Souillac, L'Escalier, Quartier Militaire, Pamplemousses and Rose Belle. At the last three exchanges it is also planned to extend the present building. This programme will be carried out over four years at a cost of Rs 398,000 for the equipment and Rs 60,000 for the construction work.

36. Finally, it has become necessary to install eleven extensions of 50 lines limit in the following existing exchanges—Flacq, Chemin Grenier, Tombeau Bay, Grand Baie, Triolet, Pamplemousses, Rivière des Anguilles, Tamarin, Pointe aux Sables, Mapou and Mahebourg. This programme will be carried out over the period 1971-75 at an estimated cost of Rs 451.000.

(iii) *Other Improvements to the Telephone and Telex Service*

(a) TELEPHONE

37. It is planned to spend Rs 2.7 million over the next four years in making other improvements to the telephone system so that subscribers may get a better service.

38. Rs 2 million will be allocated for the purchase and installation of external line plant and equipment so that the subscribers' distribution network can be developed in various sections of the system with the growth in demand. Further, it is proposed to put up about 15 call offices in different parts of the Island over the next four years at a cost of Rs 68,000. At present there are only 15 call offices of the coin box type in the Island. The choice of localities has yet to be finalized but will be influenced by demand.

39. The increasing demand by Government departments for telephone extensions over the last few years has outstripped the capacity of the actual equipment to meet this demand. To remedy this situation it is proposed to install more lines to meet the need of those departments where the present service given is the most inadequate. Therefore, Rs 250,000 are to be spent on improving the telephone service available to the Police Headquarters at Line Barracks, at Plaisance Airport, Princess Margaret Orthopaedic Hospital and the Civil Hospital.

40. Finally, it has been decided to install a dial-a-disc or automatic tune service which relays music to subscribers as a revenue earning scheme. The service will be limited to the period from 4 p.m. to 8 a.m. so as to avoid congestion of traffic in the exchanges. It will cost Rs 14,000 to set up the scheme.

(b) TELEX

41. Since the dismantling of the telegraph network, the Post Office Departments have had to rely solely on the telephone service for the transmission of telegrams. This is both inconvenient and costly since not all postal agencies are connected by telephone and since the telephone lines are over-worked and often lines are not available. Further, this system does not offer any measure of secrecy to senders of telegrams. To remedy this situation it is proposed to install teleprinter facilities at 32 post offices and postal agencies throughout the island to ensure speed and secrecy in the transmission of telegrams. The total cost of this innovation is Rs 1 million of which it is planned to spend Rs 400,000 in the first four years of the Plan.

(iv) *Improvements to Facilities at Headquarters*

42. It is intended to set up a Telecommunications Training School at Plaine Lauzun so that the planned rapid expansion of the Department's activities will not be held up by a lack of sufficient trained staff. Too few qualified staff is threatening to become a real problem to the Depart-

ment and it is imperative to set up a staff training programme without delay. It is proposed therefore to set up a school where training can be given in Mauritius to electricians, telephone operators/telephonists, wireless operators and other skilled telephone workers. It is estimated that total cost of establishing such a school would be Rs 157,000—Rs 112,000 for the building plus Rs 45,000 for equipment. The school will be completed by 1971/72 and recruitment of the necessary instructors and demonstrators will be made under Technical Assistance, so that the school will open as soon as possible.

43. A new telecommunications store will be needed shortly since it has been decided that use of the Department's present building is to be transferred to another Ministry. It has therefore become necessary to find another building and it is intended to construct a new store at Plaine Lauzun, adjacent to the proposed Telecommunication Training School. The building will be designed to accommodate the storage of cables on the ground floor and offices plus more storage space on the first floor. The estimated cost of the building is Rs 294,000.

44. The Department is allocating Rs 264,000 over the next four years to replace vans and lorries which will wear out over this period.

45. Also, Rs 40,000 will be spent in establishing an inland Mobile Radio System.

(v) *Government Radio Station*

46. The present Government Coast Radio Station, operated by the Marine Services is to be provided with more up-to-date equipment and its operation is to be handed over to the Department of Telecommunications which will run it as a part of the present Government Radio Station. The cost of this equipment and the justification for the project has been written up under the Marine Services Section under the item Ship/Shore Radio Service. The cost of the new building which is incurred with the decision to re-site the Government Radio Station in a more suitable location will be borne by the Telecommunications Departments which have allocated Rs 30,000 for this item.

D. Department of Meteorology

47. It is the function of the Department of Meteorology to make daily observations of the wind, temperature and humidity conditions which affect Mauritius and also, more specifically, to be on the alert for the approach of tropical cyclones and to chart their progress across the Indian Ocean. The Department maintains meteorological stations on the outlying dependencies of Rodrigues, St. Brandon and Agalega as well as in Mauritius. The Department has prepared detailed estimates of expenditure for the projects that it wishes to undertake over the period 1971/72—1974/75 so that it may carry out its work efficiently. The total estimated cost of the four year programme is Rs 1.6 million.

(i) *New Headquarters*

48. The present meteorological headquarters at Vacoas were originally an aerological station and its adoption by the Meteorological Department for their purpose has never been completely satisfactory. The higher land to the north of the station interferes with its efficient operation by impeding the accurate observation of wind, temperature and humidity conditions, and this problem would become especially acute in the case of the weather surveillance radar equipment which it is proposed to purchase in 1973/74 and which must be allowed to operate on high open land. In addition, the Vacoas Observatory lands, where the Meteorological Headquarters are situated, occupy 7½ acres of land which are eminently suitable for urban development. Therefore, it has been decided to hand over the present site and buildings to the Ministry of Housing, Lands and Town & Country Planning and to move the Meteorological Headquarters to a new site. Various alternative sites are under consideration and the most suitable appears to be at Butte Chaumont, near Curepipe, although the choice has not yet been finalized, since it will depend largely upon the situation of the new airport. It is proposed to carry out the necessary construction work for the new headquarters over the next three years, 1971/72 to 1973/74. It is estimated that it will cost Rs 400,000 to provide suitable office accommodation for the professional staff, dormitory accommodation for twelve officers who will live at headquarters, plus a library to provide storage space for records. Existing equipment will be transferred from the present headquarters and new equipment has been allowed for under separate project headings; therefore the cost of the new headquarters refer solely to construction costs.

(ii) *Offices and Quarters, Dependencies*

49. It is planned to extend the existing meteorological building at St. Brandon in order that a standard anemometer, which is used to measure wind speeds, can be erected there. It is intended to carry out the necessary construction work in 1971/72 at an estimated cost of Rs 10,000. The work will be undertaken by a local contractor.

50. It is also proposed to provide proper accommodation on Government land at Agalega for the housing of meteorological staff there: at present rented accommodation provided for the staff is of a not very satisfactory standard. It is intended that work starts in 1971/72 and is completed by the end of the following year. It is expected that the cost of providing accommodation of a reasonable standard for staff will be Rs 80,000.

(iii) *Weather Surveillance Radar Equipment*

51. It is proposed to purchase in 1972/73 and 1973/74 weather surveillance radar equipment in order to locate and track and analyse approaching tropical cyclones with greater accuracy than at present, to provide a more up-to-date daily picture of the weather affecting Mauritius and to improve the information available to aviation.

52. This equipment will be the most important part of the Cyclone Warning System and will be supplemented by information received from the weather satellites, the reception of which will also be improved as part of the Department's four-year planned development programme. The present information which can be picked up on approaching tropical cyclones is inadequate both for providing the detailed analysis necessary for local use or for providing information of the sort required by World Weather Watch. The equipment, therefore, will allow Mauritius to participate in the protection given by international meteorological services to shipping and to other population centres in the South West Indian Ocean area, as well as to better protect herself. The estimated cost of installing the radar equipment is Rs 800,000.

(iv) *Satellite Photograph Reception*

53. Pictures received from weather satellites play an important role in the Cyclone Warning System as well as in the more frequent task of assisting in the meteorological briefings of air crews. It is planned to phase out the visual mode of transmission from satellites in 1972 and to transmit only high resolution infrared wave lengths. Therefore, it is necessary to replace the existing (APT) equipment, which operates by picture transmission and to replace it with satellite photograph reception equipment capable of receiving information in the form in which it will be transmitted by the satellites in the near future. It is intended to purchase the new equipment in 1971/72 at an estimated cost of Rs 50,000.

(v) *Telecommunications*

54. Meteorological data has to be transmitted from the Meteorologoical Headquarters to various organizations which have to be kept constantly in touch with the weather conditions, such as the airport, the commercial and harbour authorities in Port Louis and the Government Radio Station. It is proposed to provide teleprinter and facsimile links between Headquarters and the GRS and the commercial and harbour authorities which at present rely on the telephone service and an additional link between the Meteorological Headquarters and the airport, so that meteological data can be forwarded directly to them.

55. It is intended to install a telecommunications transmitter at headquarters and reception equipment at the airport, port and Government radio station. The estimated cost of providing this improved meteorological service is Rs 200,000.

(vi) *Electrolytic Hydrogen Generator*

56. The generation of hydrogen for filling the meteorological balloons is done at present by a chemical method, and it is planned to change over to an electrical process which it is estimated will produce hydrogen at half the present cost. Electrolytic hydrogen generators have been in

use for a considerable time, but it is only recently that such generators have been produced in a small size, suitable to the requirements of Mauritius. The Department has explored other methods of obtaining hydrogen, including the bulk purchase of chemicals and the import of hydrogen in cylinders, but has found that the electrolytic hydrogen generator is the most economical method. It is therefore proposed to purchase a generator in 1971/72, at an estimated cost of Rs 100,000, thereby effecting savings of approximately Rs 13,000 per annum, or half the present cost of producing hydrogen.

(vii) *Additional Services*

57. With the planned expansion of industry and tourism it is proposed to publish a small book entitled, "Climate of Mauritius and the Dependencies" in anticipation of demand by visitors and businessmen. It is estimated that this will cost Rs. 2,500 to compile.

E. Posts and Telegraphs Department

58. The Post and Telegraphs Department is responsible for the running of the postal system, and in order to be able to cope with the steadily increasing traffic has planned a capital investment programme of Rs 1.29 million over the period 1971/72 to 1974/75. However, out of this total a sum of Rs 340,000 will fall under the T-P-T programme, so that the programme which falls directly under the posts and Telegraphs Department's budget is Rs 950,000.

(i) *General Post Office*

59. The main Post Office in Port Louis has become too small to be able to cope with the demands made upon it with the increase in postal traffic. It is, therefore, proposed to construct a new building adjacent to the existing General Post Office to accommodate a sorting and parcels post office and also a postal training school, so that the existing building may be used exclusively for the provision of general services to the public. The new building will consist of a sorting office proper, a parcels post office (counter), a loading platform for vans, a space for private boxes, stores for parcels, stores, messroom plus the postal training school. It has been designed specifically to ensure better sorting office arrangements, including easy accessibility, rapid handling of mail, security, and sufficient space to allow the introduction of mechanization.

60. It is intended to carry out the necessary construction work over the next two years at an estimated cost of Rs 500,000. An estimate of Rs 300,000 has been made for the additional equipment which will be required for the new sorting office and training school. This will be purchased in 1974 and 1975 after completion of construction of the extension to the General Post Office.

(ii) *District Post Offices*

61. It is proposed to build a total of ten district post offices over the next four years at Curepipe, Pamplemousses, Quatre-Bornes, Bon Accueil, Curepipe Road, Phoenix, Port-Louis Eastern Suburb, Rose-Hill, Vacoas and Moka. This will enable these Post Offices to be moved out of rented buildings, which not only are a burdern on the Departments' recurrent budget but are also unsatisfactory in several aspects, especially being limited in space and lacking proper security arrangements. The three post offices which fall under the Department's budget are Rose-Hill, Curepipe and Vacoas, the three largest district post offices and are estimated to cost Rs 400,000.

(iii) *Equipment*

62. It is planned to set up a mobile post office service to operate in the coastal region between Beau Champ and Mahebourg. This service will be started in 1971/72 for a capital outlay of Rs. 40,000.

63. The Port-Louis Western Suburb Post Office will be equipped with metal boxes in 1971/72 in response to the increase in demand for them from industry in the developing Plaine Lauzun area. This will cost Rs 10,000 to put into effect.

SUMMARY OF CAPITAL EXPENDITURE 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF COMMUNICATIONS	114,462	18,281	29,829	25,440	40,912
A Civil Aviation	41,647	251	1,396	10,000	30,000
B Marine Services	50,478	14,558	20,345	7,025	8,550
C Telecommunications ...	19,444	3,109	7,316	7,182	1,837
D Meteorology	1,643	223	287	733	400
E Posts and Telegraphs ...	1,250	140	485	500	125

SUMMARY OF CAPITAL EXPENDITURE 1971-1975—*continued*

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—CIVIL AVIATION ...	41,647	251	1,396	10,000	30,000
New Airport	41,000	—	1,000	10,000	30,000
Improvements to Plaisance Airport	647	251	396	—	—
Garages	46	46	—	—	—
Radio and Control Equipment	496	100	396	—	—
Vehicles and Equipment ...	30	30	—	—	—
Main Stores Building ...	25	25	—	—	—
Duty Free Shop	30	30	—	—	—
Other	20	20	—	—	—
TOTAL—MARINE SERVICES ...	50,478	14,558	20,345	7,025	8,550
1. Port Louis Harbour					
(i) Major Capital Works					
Construction of Quays ...	18,381	4,381	3,000	5,000	6,000
Completion of Stage I, West Quay	2,381	2,381	—	—	—
Extension of West Quay ...	10,000	2,000	3,000	5,000	—
Construction of Further Quays ..	6,000	—	—	—	6,000
Reclamation of Mer Rouge ...	18,300	6,515	11,785	—	—
Construction of Retaining Walls	1,000	1,000	—	—	—
Diversion of Latanier Stream ...	3,000	—	3,000	—	—
Filling of Mer Rouge ...	10,000	3,500	6,500	—	—
Construction of Approach Road	1,500	600	900	—	—
Fees and Contingencies ...	2,800	1,415	1,385	—	—
General Improvement to Harbour and Quay Facilities ...	10,250	3,250	4,925	2,025	50
Storage Facilities for Imported Cereals and Food Aid Supplies	4,000	100	1,950	1,950	—
Cargo Shed	3,000	1,500	1,500	—	—
Cargo Handling Equipment ...	2,000	1,000	1,000	—	—
Improvement to Granary ...	500	300	200	—	—
Workshop and Crane Garage ...	300	200	100	—	—
Patent Mooring Buoys ...	275	75	75	75	50
Provisional Passenger Terminal...	100	—	100	—	—
Range Lights, Harbour Approach	75	75	—	—	—

SUMMARY OF CAPITAL EXPENDITURE 1971–1975—*continued*

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
(ii) Harbour Craft and Equipment ...	3,427	292	635	—	2,500
Improvements to Le Corsaire ...	450	275	175	—	—
Improvements to Other Tugs ...	60	—	60	—	—
Purchase of a New Tug ...	2,500	—	—	-	2,500
Ship/Shore Radio Equipment ...	400	—	400	—	—
Portable VHF Radio ...	17	17	—	—	—
II. Projects Not Related to Port Louis Harbour ...	120	120	—	—	—
Improvements to Cave Point Lighthouse	90	90	—	—	—
Construction of Jetty, Flat Island	30	30	—	—	—
TOTAL—TELECOMMUNICATIONS	19,444	3,109	7,316	7,182	1,837
(i) Main Exchanges					
Rose Hill	1,835	100	1,735	—	—
Extension to Existing Building ...	450	100	350	—	—
Installation of Extension No. 3 ...	1,385	—	1,385	—	—
Port Louis	4,435	1,185	450	2,800	—
Extension to Existing Building ...	450	—	450	—	—
Installation of Extension Nos. 2 & 3	3,985	1,185	—	2,800	—
Floreal Exchange	8,440	350	4,015	3,450	625
Extension to Existing Building ...	700	350	350	—	—
Installation of Equipment ...	7,740	—	3,665	3,450	625
(ii) Rural Exchanges					
Provision of 5 New Exchanges ...	308	20	144	72	72
(a) Building	100	20	40	20	20
(b) Equipment	208	—	104	52	52
Improvements to 20 Existing Exchanges	909	132	238	170	369
(a) Building	60	—	40	—	20
(b) Equipment	849	132	198	170	349

SUMMARY OF CAPITAL EXPENDITURE 1971–1975—*continued*

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
(iii) General Improvements to Telephone and Telex Service ...	2,732	720	674	644	694
Installation of External Line Plant and Equipment	2,000	500	500	500	500
Call Offices	68	26	14	14	14
Improvement to Goverment Telephone Service ...	250	40	60	50	100
Dial-a-Disc	14	14	—	—	—
Telex Service	400	140	100	80	80
(iv) Improvements to Headquarters Facilities	715	562	50	36	67
Telecommunications Training Schools	157	157	—	—	—
Telecommunications Store ...	294	294	—	—	—
Vehicles	264	111	50	36	67
Inland Mobile Radio Telephone	40	10	10	10	10
(v) Government Radio Station ...	30	30	—	—	—
TOTAL—METEOROLOGY ...	1,643	223	287	733	400
Offices and Quarters Dependences ...	90	20	70	—	—
New Headquarters	400	50	117	233	—
Satellite Photograph Reception ...	50	50	—	—	—
Electrolytic Hydrogen Generator ...	100	100	—	—	—
Additional Services	3	3	—	—	—
Weather Radar Surveillance ...	800	—	—	400	400
Telecommunications Transmitter at Headquarters and Reception Stations at Port Louis Office ...	200	—	100	100	—
GRAND TOTAL—POSTS AND TELEGRAPHS DEPARTMENT ...	1,590	255	485	685	165
T-P-T Programme (7 district P.Os.)	340	115	—	185	40
TOTAL COST	1,250	140	485	500	125
General Post Office ...	500	10	190	300	—
Equipment for General Post Office	300	—	100	200	—
Curepipe Post Office ...	150	80	70	—	—
Rose Hill Post Office ...	125	—	125	—	—
Vacoas Post Office ...	125	—	—	—	125
Equipment	10	10	—	—	—
Transport Equipment ...	40	40	—	—	—

CHAPTER 4

MINISTRY OF LABOUR

Besides dealing with matters relating to labour legislation and employment, the Ministry of Labour also has responsibility for the initiation of Trade Training schemes. During the Plan Period 1971-1975 the Ministry proposes to undertake two capital projects, firstly the construction of Employment Exchanges and Labour Offices and a Registry of Association, which is to be done by the Development Works Corporation and secondly the equipping of a recently established Sea Training School, at an estimated cost of Rs 200,000. No other capital expenditure is envisaged by the Ministry of Labour over the next four years.

A. Sea Training School

2. In 1970 the Government of Mauritius decided to set up a pre-Sea Training School which would run courses in basic modern sea-faring techniques and turn out qualified seamen to meet the growing needs of local shipping companies and foreign shipping lines. No similar school existed before 1970, and given the fierce nature of international competition to find employment on foreign ships, who are increasingly demanding pre-sea training qualifications and/or experience from all their recruits, it is imperative that if the number of Mauritians working on ships, currently estimated at around one thousand, is to be raised significantly, then the seamen must be trained in Mauritius, before they seek employment. The School will take students for the pre-sea training course who are between 16½ to 20 years of age and who have received at least four years postprimary education, and, at least initially, will also take in seamen for re-training. The courses will last 15-20 weeks and will consist of 10 weeks joint training in theoretical and practical seamanship, e.g. boat drill, fire fighting, first aid, accident prevention, civics, hygiene, English, etc., followed by either 10 weeks separate special training for general purpose crew, such as deck boys and engine hands, or by 5 weeks special training for stewards' aids, mess boys and cabin boys. The course for general purpose crew will instruct the students in techniques of splicing, battening hatches, tool knowledge, navigation (knowledge of elementary nautical instruments, the setting and correction of a course, map reading), rules of the sea, engine room knowledge, etc.

3. The Ministry of Labour has set up an Advisory Board on which is represented all local shipping companies and agents of foreign shipping lines, who are currently considering suitable arrangements for the recruitment by shipping companies of seamen trained at the Sea Training School. Therefore, no difficulties are envisaged in finding employment for the 60 trainees who will graduate from the School each year.

4. The School has been established in Port Louis in buildings formerly used by the Mauritius Naval Volunteer Force, and converted to suit the needs of the School. The first in-service training course on which seventeen seamen were retrained, finished in the middle of May. Many of the seamen trained in the schools have already found employment on foreign ships. However the School is awaiting the arrival of various items of equipment for use in practical lessons, before beginning to operate on a full-time basis as planned. The equipment consists of two life-boats with associated equipment and spares, two dinghies, also equipped, one ship's hatch, one winch diesel engine, and one steel derrick: some audio-visual aids for teaching purposes have also been ordered. The total estimated cost of these items of equipment is Rs 200,000.

B. Employment Exchanges and Labour Offices and a Registry of Association

5. It is proposed to put up buildings which can be used jointly as Employment Exchanges and Labour Offices and to move the officers working in these departments out of rented buildings, where they are accommodated at present. It is also intended to erect a building in Port-Louis to house the Registry of Association.

6. In Curepipe, Rose Belle and Quartier Militaire, where registration is being done continuously, the building will consist of five rooms, while in eighteen rural centres, where it is also planned to provide office accommodation for officials of the Ministry of Labour, but where the Labour Inspectors only call once or twice a week, the Employment Exchanges and Labour Offices will be housed in buildings consisting of only two rooms: the total cost of the project is Rs 407,000 based on an average building cost of Rs 15 per square foot. Design details have been drawn up and it is planned that the Development Works Corporation carry out the programme in 1971/72.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL : MINISTRY OF LABOUR ...	200	200	—	—	—
Equipment for Sea Training School ...	200	200	—	—	—
One 24 ft. glass fibre lifeboat ...	—	—	—	—	—
One set of gravity davits and winch	—	—	—	—	—
Ten spare oars with crutches for lifeboat	—	—	—	—	—
Two 8 ft. glass fibre dinghies with oars and crutches	—	—	—	—	—
Six spare oars with crutches for dinghies	—	—	—	—	—
One 24 ft. glass fibre motor lifeboat	—	—	—	—	—
One ship hatch	—	—	—	—	—
One winch diesel engine water cooled 5 HP	—	—	—	—	—
One steel derrick	—	—	—	—	—
Audio-Visual Aids	—	—	—	—	—

CHAPTER 5

MINISTRY OF INFORMATION AND BROADCASTING

The Ministry of Information and Broadcasting is responsible for a wide group of related activities, all of which form part of the Government Information Services. It issues communiqués to the press and radio on Government activities, provides photographic and/or film coverage of major events, organizes official press conferences and puts out Inforama, a monthly bulletin containing articles on major Government projects. It also has responsibility for the running of the Overseas News Service, for the provision of mobile cinema shows in rural areas, for the preparation of Legislative Assembly reports and lastly for the provision of public address equipment to Government.

2. Various factors, primarily the lack of qualified technical staff and modern equipment have resulted in the Ministry being able to undertake satisfactorily only certain of its designated functions, namely informing the radio and television of Government activities and running the Overseas News Service. The planned development of the Government Information Services has two main aims. Firstly, the provision of more and better information both on world affairs and on the Government's own affairs. This is to be achieved in the context of world affairs by drawing on a wider range of news sources than at present; and in the context of domestic affairs by wider coverage of events and by more frequent visits to rural areas. Secondly, if the economic and social development of Mauritius is to get underway as planned, the active co-operation and participation of the people must be sought. This co-operation can be achieved through a public relations programme, aimed at explaining Government policy to the people.

3. In order to carry out this programme, far greater use must be made of audio-visual equipment, both at the headquarters of the Mauritius Broadcasting Corporation, and by mobile film units, and there must be more personal contact, through talks and addresses, especially in the rural areas.

4. The Ministry, therefore, intends to purchase vehicles and equipment over the Plan Period 1971 to 1975 to a total value of Rs 515,000 so as to allow the Government Information Services to function efficiently. The

sort of equipment which is to be purchased includes photo and cine equipment, including a fully equipped cinema van, a mobile film unit, public address equipment, teleprinters and other receiving equipment and finally printing equipment. The manpower implications of this programme have been calculated and additional staff will receive training in order to enable them to undertake their new responsibilities.

CAPITAL EXPENDITURE OVER THE PLAN PERIOD 1971-75

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF INFORMATION AND BROADCASTING ...	515	129	39	199	148
Printing Press & Ancillary Equipment	60	60	—	—	—
Mobile Film Unit	60	60	—	—	—
4 Teleprinters & Accessories ...	36	9	9	9	9
1 Mini Van	20	—	20	—	—
Photo Camera and Flood Lighting Equipment	13	—	—	13	—
Dark Room & Processing Equipment	50	—	—	50	—
Editing Equipment	27	—	—	27	—
Projectors, Amplifiers & Tape recorders	23	—	—	23	—
1 Cinema Van, fully equipped ...	60	—	—	60	—
6 Teleprinters	48	—	—	—	48
Receiver and Accessories ...	70	—	—	—	70
Other	48	—	10	17	21

CHAPTER 6

PRIME MINISTER'S OFFICE

There are six sections or departments which fall under the control of the Prime Minister's Office: Central Administration, Police, Special Mobile Force, The Civil Service Training Scheme, Development of Rodrigues and the Government Printing Department. Of these, the Civil Service Training Scheme envisages no capital expenditures over the next four years, while the Development of Rodrigues has been included separately in the text. Excluding Rodrigues, therefore, the Prime Minister's Office has drawn up a programme of capital expenditure over the Plan Period 1971-1975 of Rs 12.7 million, of which Rs 3.1 million is allocated to the Police, Rs 400,000 to the Special Mobile Force, Rs 3.9 million to the Government Printing Department and Rs 5.3 million to Central Administration.

A. Central Administration

2. The Prime Minister's Office is responsible for processing requests for additional office accommodation from all Government Ministries and Departments at both the central and regional level. Over the Plan Period there will be co-ordination of all new Government office requirements, and it is proposed to group Ministries and Departments together wherever feasible into a single Government office block. Central Government office requirements are described under this section of the text and the regional Government office building programme, which is to be carried out by the Development Works Corporation is included under T-P-T programme.

3. The major scheme under Central Administration is the construction of one new Government office block and the planning for a second office block so that Central Ministries and Departments can gradually be moved into these two buildings and out of the various, scattered buildings in which they are accomodated at present. First priority is to be given to the erection of the Registrar General's Building which will be ready for many departments to move into by the end of the Plan Period. Preliminary designs for the building have been drawn up and work is expected to start on the building in 1972. It is also intended to put up a second office block, adjacent to Government House, starting work in the last year of the Plan Period 1974/75 so as to form a Government Centre in order that the headquarters of all Ministries can be situated in

one general area. It is estimated that the Registrar General's Building will cost Rs 4.5 million to construct and the Government Centre approximately Rs 8.0 million, of which only Rs 600,000 is to be incurred during the Plan Period.

4. There are also three minor capital projects included under Central Administration. Firstly, the completion of a District Court in Rose-Hill, secondly the construction of Civil Status Offices (which are included under the T-P-T programme) and finally, alterations are to be made to existing Government Buildings including the Supreme Court building. The total cost of these small projects is Rs 285,000 of which Rs 30,000 falls under the T-P-T programme.

B. Police

5. The capital expenditure envisaged by the Police Department in the period up to 1974/75 is aimed at improving the efficiency of the Police Force, by providing it with more and better aids, both for the ordinary policemen on the beat and at headquarters, at tightening up on present security arrangements where necessary, and at economising on present recurrent cost where possible.

6. It is proposed to erect five new Police Stations: at Vieux Grand Port, Montagne Blanche, Stanley, Pointe aux Sables and Mahebourg and to move the Police out of rented accommodation which they are occupying at present. A new District Headquarters at Curepipe is required also. The present arrangement of housing the Police in four separate buildings leads to a loss of efficiency. The cost of constructing these buildings is estimated at Rs 680,000 and work will be phased over four years 1971-1975.

7. To meet the need for the provision of more residential quarters for the Police in order to gradually obviate the present system of payment of housing allowances and rent assistance payments to officers, four blocks of flats, each consisting of nine flats are to be built, one at Mahebourg, two at Bell Village and one at Rose Hill. Their construction will be phased over four years and the total cost of providing such accommodation will be Rs 720,000.

8. More vehicles are required by all branches of the Police Force in order to enable them to carry out their duties. A total of Rs 757,000 will have to be spent over the period 1971-1975, over half of which will be incurred in the first year. The vehicles to be purchased include walkie-talkie cars, Black Marias, vans, lorries, sedan cars and motor cycles.

9. Police radio facilities are to be improved by the erection of a repeater station at Chamarel and the fencing of an existing station. It is also planned to purchase various items of equipment, namely wire ropes for eight wireless masts, testing gears, two walkie-talkies, and fifteen wireless sets for Mobile Stations. All expenditure will be incurred in 1971/72, to a value of Rs 166,000 except the outlay of Rs 75,000 over the following three years for five wireless sets each year.

10. Other capital expenditure which is to be given priority is the construction and equipment of a forensic science laboratory in 1971/72 at a total cost of Rs 323,000 the strengthening of the Police Information room at Line Barracks for Rs 50,000 also in 1971/72, and the building of Special Branch Headquarters in Line Barracks which will take two years to complete, starting in 1971/72 and is estimated to cost Rs 300,000. A final, small item of Rs 25,000 is concerned with the provision of amenities in the form of a parade ground and volley ball and basket ball pitches for police riot units. It is expected that this last item will be included in the T-P-T programme.

C. Special Mobile Force

11. It is proposed to construct twelve married quarters for N.C.O's of the Special Mobile Force at a total cost of Rs 336,000 spread over two years with work beginning in 1971/72. The only other item of capital expenditure foreseen is an outlay of Rs 80,000 in 1971/72 for the purchase of tools for the Armourer and tools for the Mechanical Workshop.

D. Government Printing Department

12. The Government Printing Office is responsible for the printing of all publications emanating from the Government. The growing volume of work of Government Departments has consequently been reflected in the increasing workload of the Government Printing Department and a position has now been reached where overtime work is becoming a regular feature: more men, machines and space are urgently required if the Printing Office is to carry out its work satisfactorily.

13. The present Printing Office has become too small for the volume of work which it must handle and it is proposed to build a new office in Port Louis, close to Central Government Departments, large enough for the Government Printing Department to be able to increase its scale of operation as required over the foreseeable future in an efficient manner, without being hampered by lack of office space. It is planned to put up the building in the second and third year of the Plan, at an estimated cost of Rs 1.75 million and to purchase equipment in the third and fourth year of the Plan to a value of Rs 2 million. The items of equipment to be purchased relate to the estimated requirements of the press section, the composing room and the binding section of the Printing Office, based on the expected volume of work which it will be handling by the mid 1970's. However, two items of equipment are to be purchased immediately at a total cost of Rs 107,000. A monotype super caster is needed to replace the existing hand setting type machine, which is slow to set up and cannot cope with the volume of work which it is called upon to undertake. The other item of equipment is a Thermograph Heater, to be used for relief printing of cards.

SUMMARY OF CAPITAL EXPENDITURE OVER THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—PRIME MINISTER'S OFFICE ...	12,729	2,989	3,436	3,374	2,930
Central Administration	5,385	1,010	1,875	1,000	1,500
Police	3,071	1,624	518	499	430
Special Mobile Force	416	248	168	—	—
Government Printing Department ...	3,857	107	875	1,875	1,000

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	Phasing of Expenditure 1971/72	1972/73	1973/74	1974/75
TOTAL—POLICE DEPARTMENT ...	3,071	1,624	518	499	430
Quarters	720	180	180	180	180
New Police Stations	680	210	120	220	130
Internal Alterations, Line Barracks...	50	50	—	—	—
Forensic Science Laboratory ...	323	323	—	—	—
Vehicles	757	495	93	74	95
Police Radio	241	166	25	25	25
Special Branch Headquaters ...	300	200	100	—	—
TOTAL—SPECIAL MOBILE Force ...	416	248	168	—	—
Quarters	336	168	168	—	—
Tools for Armourer and Mechanical Workshop	80	80	—	—	—
TOTAL—GOVERNMENT PRINTING DEPARTMENT ...	3,857	107	875	1,875	1,000
New Printing Office	1,750		875	875	—
Equipment : ... ... of which :—	2,000	—	—	1,000	1,000
Press Section ...	807	—	—	—	—
4 offset presses	755	—	—	—	—
1 register table	14	—	—	—	—
1 ruling machine	15	—	—	—	—
air conditioners	20	—	—	—	—
Composing Room ...	825	—	—	—	—
4 monotype keyboard ...	120	—	—	—	—
3 monotype casters	300	—	—	—	—
1 new set of frames for cases ...	50	—	—	—	—
4 imposition stones	12	—	—	—	—
12 racks for storing standing forms	40	—	—	—	—
2 funditor saws	70	—	—	—	—
3 mitring machines	8	—	—	—	—
3 new proofing presses ...	75	—	—	—	—
1 blockmaking machine ...	130	—	—	—	—
air conditioners	20	—	—	—	—

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971-1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/7*
Binding Sections ...	368	—	—	—	—
2 folding machines	85	—	—	—	—
3 sewing machines for sewing books	105	—	—	—	—
3 stitching machines	80	—	—	—	—
4 electric glue pots	7	—	—	—	—
4 electric paste pots	7	—	—	—	—
4 blocking presses	12	—	—	—	—
2 revolving tables for collating ...	35	—	—	—	—
24 chairs, 6 benches, 6 tables ...	17	—	—	—	—
air conditioners	20	—	—	—	—
Plus :					
1 monotype super caster ...	105	105	—	—	—
1 thermograph heater ...	2	2	—	—	—
TOTAL—CENTRAL GOVERNMENT OFFICE BUILDINGS ...	5,385	1,010	1,875	1,000	1,500
Registrar General's Building ...	4,500	800	1,800	1,000	900
Government Centre	600	—	—	—	600
District Court, Rose Hill ...	175	100	75	—	—
Alterations to Existing Buildings ...	110	110	—	—	—

CHAPTER 7

MINISTRY OF EDUCATION AND CULTURAL AFFAIRS

The capital expenditure programme planned by the Ministry of Education and Cultural Affairs over the Plan Period 1971-1975 is aimed both at raising school standards, introducing everyday technology at all levels, and at providing improved and expanded training facilities at the post secondary level. The envisaged improvements to the educational system in Mauritius will involve a total public sector capital outlay of Rs 26.7 million over the next four years, Rs 20.7 million of which will be undertaken under the aegis of the Ministry of Education and Cultural Affairs and Rs 6.0 million of which fall under the T-P-T programme.

A. The Schools' Programme

2. The Schools' Development Programme can be broadly classified into two categories: firstly a schools' building programme plus the purchase of associated furniture and equipment in order to expand the physical capacity of the Government school system over the next four years, and secondly a programme of loans to private secondary schools so that they may simultaneously widen their scope to give more weight to the commercial, scientific and technical subjects whilst also improving their general standard of education.

3. The total school building programme planned for the period 1971-1975, plus the cost of purchasing additional furniture and equipment is Rs 8.9 million. However of this sum, Rs 6.0 million, which is for the improvement and expansion of primary school facilities, falls under the T-P-T programme and so is part of the comprehensive programme to be undertaken by the newly established Development Works Corporation, for which separate estimates of capital expenditure are given. Expansion of the physical capacity of the Government school system which remains the responsibility of the Ministry of Education and Cultural Affairs is therefore Rs 2.9 million. However, the major share of capital expenditure aiming at improving the standards of secondary education is to be in the form of loans to private schools to enable them to undertake certain programmes approved by the Ministry. A sum of Rs 7.0 million has been allocated for this purpose.

(i) *Primary Schools*

4. See paragraph 8 " Building of Primary School Classrooms " in Chapter 17—The " Travail Pour Tous " programme.

(ii) *Secondary Schools and Senior Primary Schools*

5. In 1969, a total of 16,775 pupils left primary schools after graduating from Standard VI, and of these 9,500 were able to enrol in secondary schools and a further 120 in senior primary schools. In that same year almost 80 per cent of secondary school pupils were attending private schools, where the level of education, if taken to be measured by examination passes, is generally much lower than in the State schools. The standard of secondary education given in these schools must be raised. It is therefore planned to concentrate efforts to achieve this end by improving facilities at selected private secondary schools through a system of loans for improving facilities and for helping them introduce technical subjects.

6. State secondary education in Mauritius is basically of the grammar school type, and only one college at present, the John Kennedy College, offers a choice of scientific, technical or commercial streams from Form III upwards. The pattern in the private schools is similar. In view of the plan objective and the needs of industrialization, it is of great importance that the teaching of scientific, technical and commercial subjects be gradually added to the curriculum of all secondary schools, both state and private. Therefore those private secondary schools which are willing and able to widen their curriculum to include these subjects will be given financial assistance in the form of loans to undertake the necessary capital investment, for example the construction of laboratories and workshops and the purchase of scientific and technical equipment to do so. It is planned to allocate Rs 7.0 million for this purpose over the three years 1972-1975 at an increasing annual figure, starting at a level of Rs 0.8 million in 1972 and rising to a level of Rs 4.25 million in the last year of the Plan. In the first year of the Plan Period 1971-72, it is proposed to spend Rs 1.8 million in order to add twenty eight more classrooms on to existing Government secondary schools and to equip and furnish them.

7. These are badly needed, both to relieve present overcrowding, which leads to situation where pupils are put together in one classroom, irrespective of the subjects they are learning, and where laboratories are being used as classrooms when they are needed for practical work by other classes etc., and also to accommodate the growing intake of new pupils each year. It is further planned to provide three junior workshops and four senior workshops and two typing rooms as part of the policy of widening the secondary schools' syllabus. It is also planned in 1971/72

to make extensions to the three existing state senior primary schools: in toto, twelve additional classrooms will be added, plus an assembly hall cum gym, a library, a workshop and a domestic science room at the schools where these facilities are now lacking. The capital cost of adding on these extra facilities is Rs 575,000. Finally, two new Government secondary schools will be constructed in the second and third year of the Plan Period, at a total capital cost of Rs 2.0 million. Scientific and technical subjects will, from the very beginning, form an important part of the courses run at these schools. These schools will set an example of the type of recommendation in education discussed in Chapter VIII Vol. I.

B. The Training Programme

8. Three capital projects are envisaged for expanding training opportunities in Mauritius over the Plan Period 1971-1975. Firstly, it is planned to expand the University so that a larger number of students can be catered for by the three schools, agriculture, administration and industrial technology, and to establish an Institute of Education, attached to the University as a fourth school. Secondly, an Industrial Technical Training Institute, which is needed to fill a gap in present training opportunities for young people in Mauritius, will be set up, and lastly the Mahatma Gandhi Institute will be established.

9. The main post secondary training institute in Mauritius is the University, which offers special training programmes to about 290 full-time students and 1,000 part-time or short course students. The courses include an agricultural diploma course, a mechanical and electrical engineering course, an accounting course and various in-service training courses. The University plans to spend Rs 4.5 million over the next four years, in order that Phase II of the University Development Programme may get underway. Phase I, which was the capital investment programme carried out to set up the University and develop it to the stage it has reached today, is virtually completed and a further expansion of facilities is now a necessity. Phase II has been designed to accommodate a rising intake of students in line with the demand expected from Government and the private sector for qualified personnel of the type that can be trained by the three schools at the University, plus the addition of a fourth school, to be named the Institute of Education. Therefore, it is proposed to put up a second block to accommodate the Industrial Technology School, including the Food Technology Department, a second block for the Agricultural School, a general purpose Teaching Block, which will be used both for short-term courses run by the University and by

delegates from conferences being held on the University Campus. In addition to those major works, other facilities are also included in the University's development plan over the next four years. A porters' lodge and general stores building is needed, and a students' canteen and common room is to be provided.

10. Further capital works will be undertaken by the Development Works Corporation such as the development of a part of the Campus for playing fields, and landscaping of the Campus.

11. An Institute of Education, under the general authority of the University and on the Campus, but with close association with the Ministry of Education, will be established in 1972/73, at a capital cost of Rs 700,000. Its main tasks will be to run courses, leading to a certificate for secondary school teachers, many of whom at present lack any profesional qualifications and to provide in-service training courses for teachers. The Institute will also be prepared to provide guidance to the Teachers Training College on questions concerning primary school teachers, to advise on educational programmes, and to undertake studies into curriculum etc.

12. An Industrial Technical Training Institute will be set up during the first part of the Plan Period in order to run courses which are not already offered at either the Industrial Trade Training Centre or the Small Scale Industries Branch (Vocational Centres). Initially, five courses will be run, namely, instrument mechanics, refrigeration and air conditioning mechanics, radio and television mechanics, traditional cabinet making and upholstery and lastly preservation of fruits and vegetables. Other trades or short courses will be added as industrial development creates new demands for skilled tradesmen and technicians. It is estimated that the capital cost of establishing the Institute will be Rs 1.0 million.

13. Finally, the Mahatma Gandhi Institute will be established at a capital cost of Rs 3.25 million. The Institute is planned to include the following:

(a) a *cultural centre* with (i) an auditorium for multipurpose activities e.g. films, dances and social activities; (ii) a library building with proper facilities for preservation of documents, and (iii) a building to house the present School of Indian Music and Dance;

(b) a *secondary school;*

(c) a *farm school.*

The Institute will act as a centre for studies on Indian history, culture, art, literature, religions and languages (with special attention to the languages common to India and Mauritius like Hindi, Urdu, Tamil, Telegu, Marathi etc.) The secondary school and the farm school will lay emphasis on technical and vocational studies to fit in the training requirements arising from Plan projects.

CAPITAL INVESTMENT PHASING 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure* 1971/72	1972/73	1973/74	1974/75
TOTAL—MINISTRY OF EDUCATION ...	20,709	4,075	5,534	5,650	5,450
Schools Programme ...	11,909	2,650	1,859	3,150	4,250
Extensions to State Secondary Schools	1,812	1,812	—	—	—
Extensions to State Senior Primary Schools	575	575	—	—	—
Two Government Secondary Schools	2,000	—	1,000	1,000	—
Loans to Private Secondary Schools	7,025	—	775	2,000	4,250
Equiment and Furniture for New Primary Schools	497	263	84	150	—
Training Programme ...	5,550	925	2,425	1,000	1,200
University Development ...	3,850	675	975	1,000	1,200
Institute of Education	700	—	700	—	—
Industrial Technical Training Institute	1,000	250	750	—	—
Mahatma Gandhi Institute ...	3,250	500	1,250	1,500	—
T-P-T PROGRAMME ...	6,000	1,500	3,000	1,500	—

UNIVERSITY DEVELOPMENT 1971–1975

(Rs 000)

TOTAL—UNIVERSITY ...	3,850	675	975	1,000	1,200
Porters Lodge plus Stores ...	50	50	—	—	—
Technology II (including Food Technology)	2,225	600	725	400	500
Teaching Block	250	—	250	—	—
Agricultural II	1,300	—	—	600	700
Canteen and Common Room ...	25	25	—	—	—
INSTITUTE OF EDUCATION ...	700	—	700	—	—

CHAPTER 8

MINISTRY OF HEALTH

The Ministry of Health intends to carry out a capital programme of Rs 23.3 million over the Plan in order to improve health facilities in Mauritius, with special emphasis being laid on the integration of all curative, promotive and preventive services, and on expanding training facilities. An important feature of the planned improvement of the health service is the proposed expansion of existing bed capacity in both hospitals and in the planned health centres. A total of 719 additional beds will be made available over the Plan Period, of which the Health Centres will have 120 obstetric beds, and the remainder will be added on to certain of the general and district hospitals. Victoria Hospital will have 165 maternity beds, 30 beds in the Burns Unit and 35 beds in the Surgical Ward; Civil Hospital will have 4 beds in the Accidents and Emergency Department and 50 beds in the Maternity Ward; Mahebourg Hospital will have 40 beds and cots in the Paediatric Ward, 70 beds divided between two Surgical Wards and 30 beds in the Gynaecology and Obstetric Ward; Long Mountain Hospital will be converted into a half-way home for mental patients, with a capacity of 67 mental beds; and finally with the opening of the Poudre d'Or Tuberculosis Hospital, 41 beds at Victoria, 46 at Civil and 21 at Flacq, which are now reserved for T.B. patients, will be vacated and made available for general patients.

A. Health Centres

2. A very important part in the Ministry of Health's development programme is to be played by the creation of thirty Health Centres throughout the island over the next four years. They will provide the following integrated and co-ordinated services under the responsibility of a Superintendent of District Health Services: family planning, maternal and child health, institutional midwifery, immunization, nutrition and health education, control of communicable diseases, environmental and occupational health control, school health and general curative services.

3. This programme of Health Centres is primarily designed to do way with the present fragmentation and lack of co-ordination in the health services, namely curative services being provided in hospitals and in dispensaries, preventive services at health offices and promotive services

in the maternal and child health centres. It is also intended to reduce the undue load now being placed on hospitals which have to deal with many cases which could be dealt with by supporting medical centres, since their treatment is fairly simple. With the provision of adequate facilities in the Health Centres, only referred and emergency cases need be admitted to the hospitals.

4. Eight Health Centres will be set up in Plaines Wilhems, five in Port Louis, three in Flacq, Rivière du Rempart, and Grand Port, and two in Black River, Moka, Pamplemousses, and Savanne, giving a total of thirty over the Plan Period. The capital cost of establishing the Health Centres is Rs 6.4 million, plus the cost of providing sets of six quarters for the staff of the Centres in the rural areas, that is everywhere except in Plaines Wilhems and Port Louis, where alternative accommodation exists, of Rs 2.7 million, giving a total capital expenditure of Rs 9.1 million.

5. The Government has also decided to implement a five year plan of action for a national family planning programme in which the family planning services will be integrated into a comprehensive maternal and child health service. Government will continue to make use of existing facilities in the Social Welfare Centers, Maternity and Child Welfare Clinics, Dispensaries and Hospitals, although the Health Centres will play an increasingly important role as they become established.

B. Environmental Health

6. The aim of the environmental health programme is to reduce various forms of contamination and pollution caused by unhealthy conditions in the environment and to promote health standards in general. The programme consists of a number of sub-projects to be undertaken by the existing Environmental Health Unit and a new unit of Occupational Health, since the volume and range of work planned is beyond the capacity of the existing Unit. It is proposed to carry out quality control checks into the sanitary aspects of buildings, food and water and to undertake surveys and investigations into bilharziasis, trade waste disposal, garbage disposal, sewage disposal and incineration methods, air pollution, industrial hygiene, occupational health and to encourage the replacement of bucket latrines with water seals.

7. Many of the communicable and parasitic diseases prevalent in Mauritius are precipitated by poor and inadequate environmental sanitation. With the rapid growth expected in industrialization these problems will become more acute, unless the sources of the problem is tackled immediately. Therefore, expenditure of Rs 531,000 over the Plan Period on the necessary equipment, materials and labour required to undertake these projects is felt to be very modest. A further Rs 1.3 million is to be spent on training personnel in sanitary science and health engineering. The training programme will probably be carried out by the University of Mauritius.

C. Improvements to Laboratory Facilities

8. The rapid expansion and modernization of the Health Services has resulted in an increase in demand for laboratory investigations to such an extent that present laboratory facilities are inadequate to deal with the volume of work required. At the present moment all investigations are concentrated at the Central Laboratory, Candos. The district hospitals are not provided with laboratories at all and the branch laboratory at Civil Hospital is not equipped to carry out chemical, pathology or bacteriology investigations. Consequently, there are long delays in receiving results when specimens are sent from other hospitals to the Central Laboratory, because it is overworked, and many cases are treated merely on a clinical basis, which often results in the disease running a longer course than would otherwise have been the case. Therefore, it is planned to re-organize the laboratory services so as to facilitate the correct diagnosis of diseases. This will result in doctors being able to treat their patients more effectively, and at less cost and will reduce the patients' length of stay in hospitals.

9. It is intended to extend the laboratory facilities now available at Sir Edgar Laurent Tuberculosis Laboratory in order to cater for Civil Hospital also. The facilities now at Civil Hospital will be transferred to the Sir Edgar Laurent Tuberculosis Laboratory. The facilities at the Central Laboratory at Candos will be upgraded and the different laboratory services will be integrated under a single director. Each district hospital will be provided with some essential laboratory equipment and facilities. The total estimated capital cost of improving and extending laboratory facilities so that they can play an important part in disease diagnosis is Rs 958,000.

D. Re-organization of the Transport Services

10. The present medical transport fleet is short of the number of vehicles required to meet the needs of the various units of the Ministry, and out of a fleet of 91, only 62 vehicles are in running order. No vehicles at all were purchased during the period 1964-1969, and only a few vehicles were acquired over the last two years. Therefore, it is proposed to spend Rs 600,000 over the Plan Period to replace old and broken down vehicles in order to provide the Ministry of Health with an efficient transport service.

E. Nurse Training

11 The Nursing School at Candos takes only some eighty nurses and fifty assistant nurses annually, which is totally inadequate to meet health service requirements and consequently there is an acute shortage of nursing personnel on the island. It is, therefore, proposed to increase the annual intake of nursing students and assistant nurses to two hundred and

one hundred respectively, by making extensions to the existing Nursing School and by the setting up of a Nursing School at the Sir Seewoosagur Ramgoolam National Hospital. An adequately staffed health service will greatly improve the quality and efficiency of health care in Mauritius. The estimated capital cost of increasing nurse training facilities is Rs 500,000.

F. Health Education and Nutrition Unit

12. It is planned to set up a Health Education and Nutrition Unit within the Ministry of Health. Although health education is part of every medical and para medical workers' job at the local level, it is felt that the addition of a small unit at the national level, to plan and co-ordinate health education activities throughout the island, to ensure that appropriate health education is included in the training of the various grades of hospital and health centre staff, as well as the in-service training of staff, would be an improvement to the health services. The objective of the project is to maintain and improve the mental, physical and social health of the population through means of education, through promotion of better use of the health services and through advising on the training of teachers, social workers, voluntary health auxiliaries and other para medical personnel. In order to set up this Unit, capital costs of Rs 73,000 will be incurred on the purchase of one mobile van, equipment and furniture.

G. Upgrading of Hospitals

13. Most of the hospitals in Mauritius are housed in converted buildings and consequently they lack the various facilities and conveniences that exist in a scientifically planned hospital. This creates problems in the proper running of hospital services and it is proposed to spend Rs 10.1 million over the next four years on upgrading hospitals throughout the island through a programme of conversions, extensions and the provision of additional facilities wherever these are needed. In many hospitals, the state of the wards is poor and consequently has a depressing effect on patients and staff. It is proposed to improve the condition of these wards by providing more toilets, bathrooms, clean and dirty utility rooms, sluices, treatment rooms, sisters' offices, kitchenettes etc. This has been referred to in the text as upgrading of wards.

14. At five hospitals the capital expenditure proposed for their upgrading averages approximately Rs 200,000 per hospital over the next four years. These are three district hospitals, the mental hospital and the Sir Seewoosagur Ramgoolam National hospital. At Brown Sequard mental hospital, it is proposed to construct four water towers so that the hospital can be assured of a full day's supply of water instead of maximum 12 hours supply per day and minimum 5 hours per day as at present, to

provide chain link fencing and an iron gate plus gatekeeper's lodge, and to make minor alterations to existing buildings. It has also been decided to convert Long Mountain hospital into a half way home for the chronically ill patients from Brown Sequard. At Souillac hospital three wards will be upgraded, a new kitchen and stores will be added, one Medical Officers' Quarters will be provided, plus other small improvements. At Moka hospital, a water reservoir will be built so that the hospital can enjoy a sure supply of water twenty-four hours a day and a new kitchen, staff mess facilities, servants' mess, Quarters for the Chief Nursing Officer will be added and the maternity ward upgraded, as well as a couple of other small changes made. At Flacq hospital it is planned to upgrade three wards and to add on a public sanitary block and an outpatients' department plus a garage. At the Sir Seewoosagur Ramgoolam National hospital it is necessary to carry out a number of minor improvements, to add air flow units to two wards, to roof the dental clinic, to create a dermatology unit at the leper hospital, to extend the administrative block, and to resurface three main corridors.

15. Mahebourg hospital is one of the two district hospitals serving the needs of the population in the South of the island. The present arrangement, whereby patients from the South of the island requiring more than simple treatment are referred to Victoria general hospital is overstraining the facilities at Victoria Hospital. It has, therefore, been decided to upgrade Mahebourg hospital from a district hospital to an intermediate hospital so that patients in the South of the island can receive surgical, paediatric, gynaecological and obstetrical treatment at Mahebourg, rather than be referred to Victoria, so relieving pressure on Victoria hospital and improving the service to the patients themselves. It is proposed to spend Rs 2.2 million over the Plan Period and to build a paediatric ward, two surgical wards, one gynaecological and obstetrics ward, a major operating theatre, plus an outpatients department, quarters, stores etc. at Mahebourg hospital.

16. At Victoria and Civil hospitals, two of the three general hospitals in Mauritius, capital expenditures of Rs 5.5 million and Rs 1.3 million respectively are envisaged. At Victoria hospital the major improvement will be the construction of a surgical and maternity complex, at an estimated cost of Rs 5.0 million, in order to relieve severe pressure on existing surgical and maternity facilities. It is also proposed to add on a Burns Unit, since no adequate such unit exists at the moment on the island, and to construct a surgical ward: there are at the moment only seventy surgical beds at Victoria hospital, which is the referral hospital for the South and West of the island, and even with the upgrading of Mahebourg from a district to an intermediate hospital, an additional surgical ward at Victoria is essential. At Civil hospital it is planned to construct an accident and emergency department, to make improvements and extensions to a maternity ward and to upgrade a ward.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure* 1971/72	1972/73	1973/74	1974/75
TOTAL—MINISTRY OF HEALTH ...	23,299	5,320	5,832	6,300	5,847
Health Centres (including Family Planning)	9,120	1,780	2,160	2,160	3,020
Environmental Health	1,976	869	717	350	40
Improvement to Laboratory Facilities	958	328	255	225	150
Re-organization of the Transport Services	600	600	—	—	—
Nurse Training	500	400	100	—	—
Health Education and Nutrition Unit	73	10	59	3	1
Upgrading of Hospitals ...	10,072	1,333	2,541	3,562	2,636
Brown Sequard	234	79	75	40	40
Souillac Hospital	208	10	21	77	100
Moka Hospital	170	10	75	25	60
Flacq	211	16	25	10	160
Sir Seewoosagur Ramgoolam National Hospital	142	10	11	15	106
Mahebourg Hospital	2,220	548	667	635	370
Civil Hospital	1,347	160	167	510	510
Victoria Hospital	5,540	500	1,500	2,250	1,290

CHAPTER 9

MINISTRY OF HOUSING, LANDS AND TOWN AND COUNTRY PLANNING

The housing programme in the Public Sector is to be undertaken by two housing organizations, the Central Housing Authority and the Mauritius Housing Corporation. The housing programme is therefore included under the section on Para-statal organizations. The Ministry of Housing, Lands and Town and Country Planning will be responsible for carrying out a Physical Planning and Cadastral Survey, at an estimated cost of Rs 2.7 million.

A. Physical Planning and Cadastral Survey

2. It is essential that a physical planning and cadastral survey of Mauritius be got underway immediately if the physical development of the Island is to be planned as a single comprehensive programme rather than in piecemeal fashion. A mapping and cadastral survey of Rodrigues is also to be undertaken.

3. A Physical Planning Group is to be set up to prepare plans for appropriate physical planning strategies for Mauritius, providing alternative sets of proposals for the long term (20 years) and short term (5 years) physical development of the country, in the light of projections of the growth of population of the economy. After having analysed the factors affecting the rate of growth of urbanization and physical development generally, with special reference to the impact of the Export Free Zone on the economy, alternative strategies for further urbanization and physical development will be prepared. The Physical Planning Team will also be asked to look into certain specific projects, among them to examine the possibility of establishing a Central Market in Port Louis, and detailed specifications will then be drawn up from their recommendations.

4. A cadastral survey, in order to determine the boundaries and ownership of plots and sites in the Island, initially in the urban areas will be a necessary part of the physical planning survey. A sum of Rs 2.0 million has been allocated in order to allow a mapping and cadastral survey of both Mauritius and Rodrigues to be got underway. The first priority is

to begin the mapping of Rodrigues, which is an essential first step towards the preparation of a land capability survey of Rodrigues. The cost of this project is estimated at Rs 75,000 and it is proposed to prepare the maps, to a scale of 1: 5000. Various items of equipment, such as aerial photography and mapping equipment are to be purchased in order to produce *inter alia* conventional line maps of Mauritius; these will be base maps to a scale of 1:100,000 or 1:25,000.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–75

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF HOUSING ...	2,701	1,000	1,051	650	—
Physical Planning and Cadastral Survey	2,701	1,000	1,051	650	—

CHAPTER 10

MINISTRY OF SOCIAL SECURITY

The Ministry of Social Security has responsibility for the administration of the public assistance programme and for the running of the prison service. Over the next four years 1971 to 1975 the Ministry plans to spend Rs 175,000 on improving the facilities of its Public Assistance Department, (this programme will be entirely carried out by the Development Works Corporation) and Rs 1.9 million on much needed improvements to the Prison Service, which will remain under the Ministerial Vote.

A. Public Assistance

REGIONAL PUBLIC ASSISTANCE CENTRES

2. It is proposed to build four new regional Public Assistance Centres, to improve the present facilities of the Ministry of Social Security.

3. Public assistance activities, which involve the payment of old age pensions, outdoor relief and family allowances are carried out through a number of regional offices situated in the main centres of population throughout the Island.

4. At present, Public Assistance officers are accommodated in both Government and rented buildings. Rented accommodation is generally unsatisfactory, firstly because it is largely converted residential accommodation and secondly since in these areas where the rental value of buildings is high, substandard office accommodation is rented in an effort to economize. Such buildings satisfy only the barest minimum requirements of security required by a Public Assistance office, which is constantly handling not inconsiderable sums of money.

5. Several Public Assistance centres have already been constructed and the justification for the proposed erection of four more such centres is both to provide more suitable office accommodation for public assistance activities, and also to reduce the costs of providing office accommodation to Regional Public Assistance Centres by gradually moving out of rented premises and into Government owned buildings.

6. Taking into consideration the case loads at the various centres and the present rental values for their accommodation, the Ministry of Social Security feels that the new centres should be put up at Pamplemousses, Curepipe, Quatre Bornes, Mahebourg, and/or Vacoas, at the rate of one a year. It is proposed to use the building plans prepared for the latest Public Assistance Centre at Bel Air as type plans, with very slight modifications, for the new centres. The Centre at Bel Air costs Rs 39,000, inclusive of fixtures and furniture, but exclusive of land. Discussions have already been held with the Ministry of Housing, Lands and Town and Country Planning, regarding the availability of Crown Land for sites for the Public Assistance Centres.

7. The total cost of the programme would be Rs 175,000 of which it is proposed to spend Rs 75,000 in 1971/72 and Rs 50,000 in the two subsequent years. The programme would be carried out by the Development Works Corporation.

B. Prison Service

8. The prisons programme for the Plan Period 1971 to 1975 is designed to combat the present overcrowding in the prisons, to segregate different categories of prisoners where it is felt that this would prove beneficial and to provide more facilities so that prisoners may engage in gainful occupations. The total cost of improving and expanding the prison system over this period would be Rs 1.9 million. These costs refer only to materials and equipment since prison labour, which is provided free of charge, would be used to undertake the necessary construction work.

9. The top priority is to build a new Borstal at Petit Verger and to convert the existing Borstal, which can no longer cope with the demands made upon it, into a detention centre. These two institutions between them would then provide the facilities necessary to deal with the special problems of young offenders at a cost of Rs 400,000 for the new building and Rs 15,000 for the conversion of the present building.

10. A second main prison is required, to house 300 prisoners at a total cost of Rs 1.8 million of which Rs 460,000 will be needed during the Plan Period. This has become necessary both to accommodate the rising numbers of prisoners and to relieve overcrowding at the present prison, and also to allow the transfer of prisoners from one prison to the other as and when the need arises in the interests of discipline and security.

11. Additional dormitories are to be added to the Richelieu Rehabilitation Centre and at the Women's Prison to house 30 and 25 inmates respectively at a total cost of Rs 95,000. Present overcrowding leads to inconvenience to the prisoners themselves and also to greater discipline

problems for prison officers. A security Block for criminal mental patients is to be built in the grounds of Brown Sequard Hospital, since the lack of one at present is a cause of much inconvenience to the hospital staff. At present criminal mental patients are accommodated in an ordinary ward in Brown Sequard Hospital.

12. Another important feature will be the development of cow breeding in the Prison farm at Richelieu Rehabilitation Centre to increase milk production so that the penal institutions will become self sufficient in milk requirements. A total sum of Rs 75,000 will be needed in the first year of the Plan to implement the project (site reclamation, planting of fodder, purchase of additional cows, construction of sheds and provision of one vehicle).

13. An Industrial School for girls is to be established so that the girls can be moved out of the Women's Prison, where they are put at present, and into a separate institution. This is in line with prison policy of segregating different types of prisoners in separate buildings where the requirements and hence treatment of each group is not similar. Finally, two blocks, each consisting of twelve flats are to be built for prison officers: this will lead to an annual reduction of approximately Rs 22,000 on the recurrent budget, at present incurred for the payment of housing allowances and rent assistance to prisons' officers. It will also provide greater security by enabling officers to be reached quickly at any time. The total cost of these construction works over the four years is Rs 1.7 million.

14. In order that prisoners can be put to work various items of equipment are necessary: printing machine and book binding equipment, mechanical workshop equipment and block making equipment will be purchased in 1971/72, at a total cost of Rs 217,500. It will be necessary to construct a new building to house the printing press and book binding equipment at a cost of Rs 9,000. One land rover is also required immediately at a cost of Rs 22,500.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–75

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF SOCIAL SECURITY	1,908	654	410	465	379
Prisons					
New Prison	310	10	50	100	150
New Borstal, Petit Verger ...	475	145	200	130	—
Richelieu Rehabilitation Centre, Cow Breeding	75	75	—	—	—
Richelieu Rehabilitation Centre, New Dormitory	40	20	20	—	—
Detention Centre, Ex Borstal Institution	15	—	—	15	—
Security Block for Criminal Mental Patients	60	—	—	20	40
Industrial School for Girls ...	100	—	15	50	35
New Dormitory, Women's Prison ...	54	—	—	25	29
Quarters for Prisons' Officers ...	500	125	125	125	125
Equipment for Construction Programme	30	30	—	—	—
Land Rover	23	23	—	—	—
New Building for Printing Press and Book Binding	9	9	—	—	—
Printing Machine and Book Binding Equipment	45	45	—	—	—
Mechanical Workshop Equipment ...	50	50	—	—	—
Equipment for Block Making Industry	122	122	—	—	—

CHAPTER 11

MINISTRY OF YOUTH AND SPORTS

The young of Mauritius, with whose welfare the Ministry of Youth and Sports is concerned, constitute a high percentage of the total population. At 30th June 1969, there were 285,000 young persons between the ages of 12 and 30 and by 1975 the number in this age group is expected to reach 359,000. There are approximately 700 youth clubs grouped into six regional federations and the total membership for all youth organizations is over 65,000. The Ministry of Youth and Sports plans to spend Rs 1.6 million over the next four years in order to provide the young people of Mauritius with more amenities. In addition a further Rs 2.8 million is to be allocated under the T-P-T programme for the provision of further facilities in the form of three stadiums in the rural areas, plus the construction of and improvements to sports grounds in villages and towns and a multi-purpose national stadium is planned in or near one of the towns. The majority of the youth training programmes which are to be undertaken during the Plan Period are to be carried out by the technical Ministries, that is the Ministry of Education, Labour and Co-operatives. The Ministry of Youth and Sports will undertake extensive education of the young in the Youth Training Centres.

A. Youth Centres

2. It is proposed to establish a number of youth centres in Mauritius where young people can take part in literary and cultural activities, such as music, reading and drama; can learn various crafts and trades in both the mechanical and construction fields as well as in handicrafts and agriculture and can also find sports facilities. It is intended that these centres will be used not only as places where young people can go along in the evenings to pursue their hobbies, but also as centres where primary school leavers who do not find places in secondary schools can attend classes during the daytime to receive instruction in various crafts and trades. Technical assistance from UN Agencies and the International Voluntary Services for the necessary additional staff required has been requested.

3. The youth centres will also serve as the headquarters of the regional youth organizations and will contain the regional offices of the Ministry.

B. Youth Conference and Training Centres

4. A second project is the planned improvements and extensions to two Youth Conference and Training Centres at Pointe Jérôme and Anse-la-Raie. The only centre which is fully operational at present is at Anse-la-Raie and it is booked all year round. The standard of facilities provided there will be improved. It is proposed to provide the centre with electricity and to make improvements to the kitchen so as to comply with the requirements of the Ministry of Health. At Pointe Jérôme it is proposed to build a meeting hall and dormitory capacity for 160 trainees. With two such centres it will be possible to organize more regular and longer training courses for Youth Leaders and at the same time to provide sufficient accommodation for the holding of the number of Youth Conferences required. The total cost of this project is Rs 330,000, spread over the first two years of the plan.

C. Vehicles

5. At the moment only two vans are available for use by the Ministry of Youth and Sports. Three more vans are needed to carry staff, trainers and equipment to youth clubs, sports grounds, youth centres and sites of youth projects. A provision of Rs 60,000 is made for the purchase of these vehicles.

D. Sports

6. A fully equipped central gymnasium with up-to-date training facilities is to be constructed at a total cost of Rs 250,000. The final decision of whether to locate it at Phoenix or Rose Hill has yet to be taken. The gymnasium will be opened to both youth and sports organizations, and weekly attendance is expected to be between 1,500 and 2,000. In addition, three dirt tracks are being built for the training of athletes and for national and international competitions. Coaches for football and other sports will arrive soon to help raise the standard of sports in Mauritius.

CAPITAL EXPENDITURE OVER THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF YOUTH & SPORTS	1,636	711	425	250	250
Youth Centres	1,000	250	250	250	250
Extensions to Youth Conference and Training Centre at Pointe Jérôme and Anse-la-Raie ...	330	175	155	—	—
Construction of Gymnasium ...	246	246	—	—	—
Vehicles	60	40	20	—	—

CHAPTER 12

MINISTRY OF AGRICULTURE AND NATURAL RESOURCES

The Ministry of Agriculture and Natural Resources is responsible for the initiation and supervision of both crop and animal husbandry projects and also for the planned development of forestry and fisheries resources. The Ministry intends to begin three new major capital projects over the Plan Period 1971-1975 aimed at raising crop output, all of which involve irrigation. The extension of irrigation will play a major part in raising crop yields since lack of adequate, reliable rainfall is one of the prime constraints in keeping crop yield down below both technically feasible levels. The bringing of new land under cultivation will be a further contributing factor, although to a much lesser extent.

2. The capital investment associated with these three projects over the period 1971-1975 is Rs 47.1 million. A further Rs 0.9 million is to be allocated to the expansion and improvement of the Crop Extension Services and Rs 1.5 million for the extension of crop research.

3. The livestock development programme over the Plan Period 1971-1975 envisages the expenditure of Rs 10.3 million, aimed at providing more full-time employment in the livestock industry, which at present provides mostly part-time employment, and at raising self-sufficiency in milk and meat production.

4. The expansion and improvement of the existing Livestock Extension Services will require a total capital expenditure of Rs 0.9 million over the period 1971-1975.

5. The Fisheries Development Programme envisages expenditure of Rs 3.2 million over the Plan Period on projects designed to re-establish the productivity of the lagoons, increase the supply of local fish to the domestic market and also to establish a Public Aquarium.

6. The Forestry Development Programme has all been included under T-P-T programme and reference to forestry projects should be made under the T-P-T Section in the text.

7. In total, the Ministry of Agriculture and Natural Resources envisages a capital investment programme of Rs 64.1 million over the Plan Period. In addition about Rs 70 million will be allocated to the undertaking of agricultural investment under the T-P-T programme.

A. Crop Development

(i) *Northern Plain Irrigation Scheme*

8. The implementation of the Northern Plain Irrigation Scheme is an important part of the agricultural development programme. It ensures the most efficient utilization of the Island's water resources for agricultural development in the northern part of Mauritius, where lack of an adequate reliable rainfall is seriously reducing crop yields below what they would otherwise be.

9. The Northern Plain Irrigation Scheme is one of the two major irrigation development projects which were studied by the FAO/UNDP Land and Water Resources Survey in connection with their investigation into the land and water resources of the Island during the period 1965-69 and for which feasibility reports were submitted to the Government of Mauritius during 1970/71. The conclusion of both reports was that agricultural yields could be raised considerably on the Island by the introduction of irrigation to a much more extensive area than that under irrigation at present, and also by the replacement of existing irrigation methods by more efficient ones.

10. It is therefore proposed to undertake a scheme in the Northern Plains which will involve the overhead irrigation of 16,650 net crop acres of sugarcane and the surface irrigation of 270 acres of paddy. Due to the terrain in the project area, overhead, rather than surface methods of irrigation would prove more economical. At present certain areas are already under some form of irrigation in the designated project area, mostly involving surface irrigation methods. These different schemes will be incorporated into the proposed main project so as to make the whole area one comprehensive scheme. The main source of water will be La Nicolière reservoir, although optimum use will also be made of unregulated sources of river and spring water in the area, notably the Calebasses and Citron Rivers and the Solitude springs. The major engineering works involved are the raising of the storage capacity of La Nicolère from 204 MCF to 680 MCF and the improvements to the La Nicolière feeder canal to reduce loss of water by seepage, plus the installation of the fixed irrigation system. The other major costs involved are the purchase of the portable irrigation equipment, the construction of additional farm roads, along which the Target Masters i.e. the portable overhead irrigation equipment, are to be transported, and clearing the land of rocks so as to obtain maximum benefit from the irrigation. The total cost of the Northern Plain Irrigation Scheme is Rs 45 million, of which Rs 35.9 million will be incurred by the public sector and Rs 9.1 million by the farm sector. Public sector finance which will be expended during the plan period 1971-1975 is Rs 31.3 million.

11. The Project is designed to raise agricultural yields, expressed in terms of sugarcane by 60 per cent in the area under irrigation, which means that average yields per acre will increase from their present level

of 22 metric tons per acre to 36 metric tons per acre. The annual production of cane will consequently rise from 372,000 metric tons to 595,000 metric tons in the project area, which will result in an incremental output of Rs 8 million in terms of sugar and molasses, net of purchased inputs. Production of two rice crops per annum will amount to 900 tons, valued at Rs 0.6 million and the annual value of interline food crops will also be Rs 0.6 million.

12. During the construction phase it is estimated that 4,600 man years of new employment will be generated. Thereafter, the permanent additional employment created will be 1,025 man years per annum.

(ii) *Western Coastal Region Irrigation Project*

13. The Western Coastal Region irrigation development project is the second irrigation scheme which was studied by the FAO/UNDP Land and Water Resources Team in conjunction with their comprehensive survey of the land and water resources of the Island. On the basis of the recommendations of the feasibility report submitted to the Government of Mauritius in 1970/71, it is proposed that land usage in the project area be altered to bring about the development of 4,700 acres of presently unused land, to reduce the land under sugar cane by some 4,000 acres and to develop 10,000 acres under foodcrops (930 acres to be devoted to rice and 8,100 acres to groundnuts, maize, peas, beans and potatoes). The expected increase in the net value of agricultural production is Rs 3.7 million per annum. It is estimated that employment creation would be at the rate of 3,165 man years during the construction stage and 2,080 man years per annum thereafter.

14. The means by which this is to be achieved is by the improvement of existing irrigation methods over an area of 12,600 acres and the development of some 4,700 acres of adjacent land not being cultivated at present. The capital works involved are the improvement of the present field distribution system, the construction of a pressurized distribution system with pumping stations and overnight storage, the construction of farm roads to allow the transport of the portable irrigation equipment through the proposed irrigation area at the intervals required, and the de-rocking of some 6,800 acres of land so that maximum benefit may be derived from the scheme. The other major cost involved is the purchase of the portable irrigation equipment. The total estimated cost of the project is Rs 33.2 million phased over the period 1971-76 of which Rs 14.7 million are to be met by the public sector and Rs 18.4 million by the farm sector.

(iii) *Small Scale Irrigation Project*

15. Drilling and testing works throughout the Island by the FAO/UNDP Land and Water Resources Team has confirmed the widespread occurrence of underground water. As a supplement to the two major irriga-

tion projects which to a large extent cover the lands of large planters and estates and which draw on surface water for their main water requirements, it is intended to promote a small scale irrigation scheme utilizing ground water specifically designed to enable small planters to apply irrigation to their plots and so increase their incomes.

16. The project envisages the eventual irrigation, both by overhead and surface means, of some 10,000 acres of land over the whole Island. The total area will be sub-divided into autonomous units of 10 acres and and each unit will be provided with its own irrigation installation. Small planters will be encouraged to group together, where each farm less than 10 acres, to form a 10 acre unit, since this is felt to be the minimum size viable unit. The majority of small planters, many of whom farm only a couple of acres, cannot hope to meet the capital costs of an irrigation scheme at the time when the costs are actually incurred, and so the planters will be made responsible only for de-rocking and clearing their land at an estimated cost of Rs 500 per acre. All other capital costs, namely the installation of the fixed irrigation equipment and the purchase of the portable equipment, will be borne by the public sector and the farmers will be asked to pay back the initial investment costs in instalments over a period of four to five years.

17. The total cost of the project is estimated at Rs 17 million, of which Rs 5 million will be incurred by the farm sector and Rs 12 million by the public sector. However, it is expected that, over the Plan Period 1971-1975, the project will be extended to only slightly over 4,000 acres, involving Rs 5 million public sector expenditure.

(iv) *Expansion of Crop Extension Services*

18. The Ministry of Agriculture will spend Rs 785,000 over the Plan Period 1971-1975 in order to expand and improve its present crop extension services. As this is an existing service being run by the Ministry the expenditure planned consists of a group of various small capital items to remedy situations where present facilities are overstrained or even lacking.

19. Expansion of present storage facilities is required at Barkly where the existing seed store is being converted to a cold room so that a new store must be built as a replacement. At Plaisance Experiment Station, there is no office or store at present, and fruits produced on the station have to be moved to other stations for storage and sale: it is therefore proposed to construct an office-cum-store building where administrative matters can be attended to and fruits stored.

20. Residential quarters for overseers at Abercrombie, Reduit, Plaisance and Curepipe Experiment Stations are to be constructed with the aim of making the overseers' administrative work easier. The quarters will be put up at the rate of one each year.

21. Demonstration schemes, to popularize and spread better agricultural methods among the farmers, are an important part of the extension service. In this context it is proposed to continue with the Fertilizer Demonstration Scheme, a project which is carried out at field level, and to purchase additional items of machinery and equipment required for trial and experimental purposes on the various experiment stations, nurseries, irrigation experiment sites as well as for general advisory service purposes and for field activities within the Ministry's current research programme.

(v) *Extension of Crop Research Programme*

22. It is proposed to incur capital expenditure of Rs 1.4 million over the coming four years, as part of a continuing programme of crop research undertaken by the Ministry of Agriculture.

23. A greenhouse is needed at Reduit in order to carry out essential experiments on epidemiology, pathogenicity and infections, methods of control and identification of various diseases. It will also be used for the retention of plants to be introduced into Mauritius which require a quarantine period and for the detention of imported plants with incomplete phytosanitary certificates. The greenhouse is to be equipped with insect proof gauze, air-conditioning units and thermostatically controlled turbo heaters, at a total estimated cost of Rs 70,000.

24. Two greenhouses are under construction and virtually finished, and these must now be equipped. A further Rs 5,000 is required to complete the works. In view of the considerable losses caused to foodcrops by plant diseases and pests, priority will be given to an acceleration of research in the field. An insectorium has recently been completed. Laboratory equipment to a value of Rs 90,000 will be purchased over the period 1971-1975 to supplement the Ministry's existing supply of such equipment.

25. In this context a pesticides laboratory is also required, which will cost Rs 30,000 and an additional outlay of Rs 40,000 will be necessary to purchase apparatus and furniture. A further small outlay of Rs 10,000 will be used for the construction of a store for inflammable chemicals. And finally, it is proposed to provide a laboratory and office for the plant pathologist, at an estimated cost of Rs 60,000. If the amount of food consumed by pests is to be reduced significantly, a continuous research programme must be carried out, and the proper facilities with which to undertake it must be provided. The facilities planned for over the next four years are therefore essential if the crop research programme is to be able to continue its important work on pest control measures.

26. There are two complementary schemes which comprise the rice research programme over the next four years. It is proposed firstly to continue the work being carried out at Nouvelle Decouverte on experimental plots to determine which are the varieties of rice best suited to Mauritian conditions. Secondly, it is intended to establish three experimental farms, at Belle Vue (Petite Rivière), Richelieu and Curepipe and conduct field

experiments to gauge the adaptability of different varieties of rice, vegetables and fruits, with the emphasis being on rice, to different culture methods and to the environmental conditions of the Island. In a second stage of this programme, which falls outside the Plan Period, an extension programme will be implemented to encourage local farmers to grow more rice and other foodcrops.

27. The largest project under the crop research programme is the Northern Plain Pilot Scheme which has been set up as a forerunner to the main Northern Plain Irrigation Scheme. The aims of the pilot scheme are to demonstrate to cultivators the feasibility of new methods and the benefits to be gained from them; to train cultivators in new techniques of irrigation and improve husbandry; to encourage and assist the formation of producers' associations and to enable technical and administrative staff to gain experience which they will be able to apply to the main scheme. The pilot project covers 300 acres of land in the North of the Island. Preliminary work has been started; a photographic survey of 200 acres has been made; work has begun on soil and weed analysis and a small study made on the economics of small planters' versus large planters' cultivation methods. It is planned to continue with the pilot scheme for the next three years, at a total estimated cost of Rs 624,000, by which time it is hoped to have sufficient experience and knowledge for the successful implementation of the main scheme, and to need no new capital expenditure in the pilot scheme.

B. Livestock Department

28. It is planned to considerably expand the livestock industry over the Plan Period and to create full-time employment opportunities in livestock rearing as fast as is feasible to as many families as is economic. Two projects, the UNDP/FAO Milk and Meat Project and the Livestock Feed Factory have been drawn up to a stage where it is possible to begin their implementation on a sizable scale in the first year of the Plan. A provision of Rs 300,000 has also been made for the continuation of the existing project under which cheap cowfeed is distributed to cowkeepers under the World Food Programme (Project 310). The remaining projects—pig production, cattle breeding centres, a central abattoir and a tuberculosis eradication scheme—which will form an integral and important part of the livestock development strategy, are still at an early stage of preparation: details on their exact form will be worked out in the first year of the Plan and their implementation will begin on a modest scale in 1971/72 with a combined planned expenditure of Rs 350,000. Provision is made over the whole Plan Period for a capital expenditure programme of Rs 5.3 million for these projects, which, with an estimated capital expenditure of 4.7 million on the UNDP/FAO Milk and Meat Project plus the Livestock Feed Factory and Rs 0.3 million for cowfeed, given a total allocation of Rs 10.3 million of capital expenditure on the livestock development programme over the next four years 1971-1975.

(i) *UNDP/FAO Milk and Meat Project*

29. The UNDP/FAO Milk and Meat Project is a continuation of an original project which got underway in July 1968, and which was revised in January 1970, after completion of certain features of the original project. The project is due to run until September 1973, and it is concerned firstly to assist the Government of Mauritius to draw up and carry out a programme for increasing the production, quality and marketing of milk and secondly, to increase the production of venison and beef. The project will have as its principal tasks the strenthening of a Livestock Division of the Ministry of Agriculture so that it is able to prepare and implement a cattle development programme and the undertaking of pilot schemes to test milk and meat production possibilities, which, if found technically and economically feasible would have wider application. These pilot schemes will include one group of trial to determine the most efficient methods of producing, collecting, processing and distributing milk and milk products and another group of trials to look at the possibilities of improving present cattle feed and fodder arrangements.

30. Finally, the project will include a programme to develop deer potential through improved management and pilot schmes, a programme to survey and improve the animal health situation and also one to improve cattle health in particular.

(ii) *Livestock Feed Factory*

31. At present the Government Feed Factory produces 800 tons of feed per month, and imports 750 tons of poultry rations per month from South Africa. In view of the expected expansion of the livestock industry over the Plan Period, it is estimated that it would be economic to expand the Government Feed Factory and to produce 1,500—1,800 tons of feed per month domestically. The present Government Feed Factory consists of well constructed buildings, although the milling and mixing machinery is very old and could not cope with the required expansion in output. A complete new milling, mixing and pelleting plant is therefore to be installed in the present buildings, which will be capable of producing 2,000 tons of feed per month on one shift. It is estimated that the cost of installing the machinery would be around Rs 1.5 million. It is considered necessary that during the cyclone season in Mauritius, enough manufactured feed of all types should be carried to last a week, in case of a failure of electric power, to ensure a continuous supply of feed to the animals. Also storage space is needed for the holding of a four months supply of reserve stocks of inputs, 70 per cent of which is maize. The present storage capacity of the feed factory, being geared to the present

manufacturing capacity of the factory, is insufficient to meet the expanded requirements for storage facilities. Therefore a four silo complex, each silo to hold 1,200 tons of maize is to be constructed, leaving the existing 1,900 tons storage capacity for all other ingredients. The maize will then be fed directly from the silo by conveyors and elevators to the mills for grinding. The cost of the silo complex is estimated at Rs 1.5 million giving a total cost for the expansion of the Government Feed Factory of Rs 3.0 million.

(iii) *Expansion of Livestock Extension Services*

32. An on-going project to improve facilities at Palmar and Curepipe Livestock Breeding Stations will continue during the Plan Period up to 1975. The balance of the project for the next four years is estimated at Rs 135,000 out of an initial project value of Rs 475,000—it will largely be spent on the further consolidation and development of pastures and the purchase of equipment at both stations.

33. Expenditure of Rs 200,000 is planned for the expansion of the Poultry Division of the Ministry of Agriculture, in order to make possible the rearing of some 10,000 more pure bred or good cross bred layers and to supply more eggs to the local market from domestic sources. Special houses, linked to electricity and water supplies and provided with the necessary equipment will be established. Provision is made for working capital requirements until such time as it is felt that these units should have become financially self-supporting. A refrigerated cold store for eggs and additional incubators and standby electrical plants are also to be acquired.

34. A sum of Rs 170,000 will be spent on fodder storage trials and demonstrations, mainly with reference to silage and other possible methods of grass storage The aim is to provide villages with fodder storage facilities so that cow-keepers are able to supplement the supply of canetops, which are the staple cattle foodstuffs with other fodder, particularly during the intercrop season.

35. And lastly, a sum of Rs 400,000 is required for the purchase of machinery and equipment required by the livestock Extension Services.

C. Fisheries Development

36. It is proposed to spend Rs 3.2 million over the Plan Period on the Fisheries Development Programme. First priority will be to raise the tandard of living of the Mauritian fishermen and re-establish the produc- ivity of the lagoons, to increase the supply of cheap fish, whether fresh, rozen, salted, smoked or canned to the local population and to increase he earnings of foreign exchange by the export of high value products

such as oysters and crustaceans. It is also planned with the overall Fisheries Development Programme to establish a Public Aquarium and research laboratory and four Marine Parks as public amenities and research centres and finally, there will be a small expenditure on vehicles for the Fisheries Protection Services.

(i) *Skipjack and Shark Fishery*

37. It is intended to undertake two pilot projects to investigate the viability of Mauritian fishermen carrying out more intensive offshore fishing activities and expanding their present mode of operation which is almost entirely confined to lagoon and inland fishing. At present schools of skipjack, which are also known as tuna, are present in the seas around Mauritius but are virtually unexploited by the fishermen. A pilot programme of research is now being conducted to assess the distribution and catch potential of the skipjack stocks around the Island and to determine the best methods of catching them. It is proposed to continue this semi-experimental project over the next four years and to look into the economics of a combined trolling/gill netting operations, which has proved successful in New Zealand waters. This would provide employment for some 75 to 100 fishermen who would be engaged on the actual fishing operations and for about 35 fishermen on shore on the processing and distribution side. Sales of fish caught would initially be made locally, but the possibility of exporting a part of the catch will be considered.

38. Sharks, which are also present in the waters around Mauritius are also very little exploited and it is proposed to run a second experimental project to investigate the feasibility of catching sharks by the longlining method and the viability of encouraging shark fishing on a commercial scale. The employment generated by the shark pilot research project would be roughly similar to that estimated for the shipjack pilot project. The capital costs of the two research projects refer to the purchase of a small fleet of motor launches from which the experiments will be conducted and a sum of Rs 850,000 has been allocated to the two projects over the Plan Period. It is also proposed that research into offshore fishing methods for white fish should be continued, but details of the programme have yet to be worked out.

(ii) *Camaron Hatchery*

39. It is planned to establish a camaron hatchery where prawns could be raised, some of which would then be released into ponds and rivers (and lagoons). The hatchery, which would be of a large enough size to produce at least two million fortlaval camarons each year would cost in the order of Rs 150,000. There will be a ready market for the prawns both in Mauritius, especially with the expected expansion of the tourist industry, and abroad.

(iii) *Oyster Culture*

40. The Mauritius oyster grows wild around much of the coastline, notably in the east and south east, under which conditions it rarely reaches a marketable size. Under proper culture conditions, however, a good commercial size is reached in three to four years. As excellent local and export market exist for oyster, five oyster farms are to be set up over the next four years, at Anse Ferney, Trou d'Eau Douce, Poudre d'Or, Poste de Flacq and Tamarin at a cost of Rs 50,000 per farm. Ten families are to be settled per farm and total capital costs have been calculated on the basis of costs per family.

41. In order for each family to earn a reasonable living from oyster farming, they must produce 10,000 oysters per annum. A total of 4,000 oysters can be raised per raft, and given that oysters take four years to reach maturity, that means that ten rafts per family are needed so that two to three rafts can reach maturity each year. The cost per raft, plus trays, is Rs 500, therefore the capital cost per family is Rs 5,000.

(iv) *Marine Parks*

42. It is proposed to establish four Marine Parks. Besides being tourist attractions they will also be of great use scientifically, in permitting research to be undertaken into nature conservation methods. The capital provision of Rs 200,000, which will cover the establishment of four parks, refers to the erection of watch towers, accommodation for wardens and boats. The construction of access roads, where this is required, will be undertaken under the T-P-T programme.

(v) *Public Aquarium and Research Laboratory*

43. It is planned to construct a public aquarium with a research laboratory attached, which would be useful for educational purposes, visits of school-children etc., as a tourist attraction, for use for scientific research and which also may be used as a distribution centre for tropical aquarium fishes, for which the possibility of establishing an export industry is being considered. The estimated capital cost of setting up the public aquarium is Rs 1.5 million. The final choice of location between Blue Bay and Port Louis has still to be made.

(vi) *Fisheries Protection Services*

44. The present mode of operation of the Fisheries Protection Services, which relies on guards living in coastal villages, needs to be supplemented by the introduction of patrol vehicles, manned by field service staff. Therefore, provision of Rs 200,000 is made for the purchase of four patrol vehicles, three of which will be on regular duty and one on standby. They would be used on 24 hour duty, patrolling the coast roads in an attempt to curb illegal fishing activities.

D. Nursing of Existing Young Tea Plantations

45. Government will meet the costs of maintenance of existing young tea plantations which have not yet been distributed to small holders. Therefore a sum of Rs 5.3 million has been provided for the first two years of the Plan Period.

E. Administration and General

46. A total of Rs 375,000 is to be spent over the next four years on items which are concerned with administrative matters.

47. A new incinerator is to be constructed at Plaisance airport at a cost of Rs 30,000 for the destruction of refuse from airplanes and of seized plants and animal parts of products. The existing incinerator may then be shifted to the Experiment Station at Reduit, where one is required.

48. A large and a small fumigation plant, costing Rs 125,000 and Rs 25,000 respectively are to be provided for Fort George to ensure that consignments of tobacco, coconuts and other products which leave Mauritius via Port Louis are disease free.

49. The store at Reduit will be extended at a cost of Rs 60,000 since the present space available is proving inadequate.

50. Provision to the amount of Rs 60,000 is also made for an administrative block at Reduit.

51. The final item of expenditure is Rs 75,000 which it is estimated will be required to improve the animal quarantine station at Roche Bois.

F. Agricultural Projects Falling under the T-P-T Programme

52. A bigger share of public sector agricultural investment is to be undertaken as part of the T-P-T programme. Under the T-P-T programme it is proposed to carry out various agricultural projects to a total estimated value of about Rs 70 million over the next four years, compared with the estimated capital expenditure of Rs 64.1 million by the Ministry. The agricultural projects to be undertaken by the Development Works Corporation have been classified into five broad categories: Replanting of Cane Areas, (Rs 31.0 million), Afforestation and Aloe Plantations, (Rs 19.0 million), Development of Fruit Tree Plantation (Rs 11.5 million), Land Development for Crops and Livestock (Rs 7.0 million) and the Development of Fish Ponds and Lagoon Fisheries (Rs 1.6 million). These projects are therefore included in the chapter on the T-P-T programme.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971-1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF AGRICULTURE	69,412	9,146	19,031	20,982	20,253
Crop Development	52,415	4,670	13,662	17,461	16,622
Northern Plain Irrigation Project	31,303	870	7,119	11,342	11,972
Western Coastal Region Irrigation Project	10,812	1,000	2,543	4,619	2,650
Small Scale Irrigation Project	5.000	500	1,000	1,500	2,000
Nursing of existing Young Tea Plantations	5,300	2,300	3,000	—	—
Expansion and Improvement of Crop Extension Services	785	183	242	180	180
Expansion of Crop Storage Facilities at Barkly	63	1	62	—	—
Office-cum-Store at Plaisance Station	30	30	—	—	—
Overseers' Quarters at Four Station	120	30	30	30	30
Fertilizer Demonstration Scheme	200	50	50	50	50
Machinery and Equipment	372	72	100	100	100
Extension of Crop Research	1,446	689	357	300	100
Green houses at Reduit Station	75	75	—	—	—
Insectarium and Laboratory	90	90	—	—	—
Pesticides Laboratory and Chemicals Store	80	40	40	—	—
Laboratory and Office for Plan Pathologist	60	60	—	—	—
Rice Research at Nouvelle Decouverte	400	100	100	100	100
Rice Research (Formosan Team)	117	100	17	—	—
Northern Plain Pilot Scheme	624	224	200	200	—

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971—1975

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
Livestock Development ...	10,332	2,566	3,876	1,790	2,100
UNDP/FAO Milk and Meat Project	1,682	1,066	496	120	—
Livestock Feed Factory ...	3,000	1,000	2,000	—	—
Other Projects Including Pig Production, Central Abattoir, Breeding Centres, and Tuberculosis Eradication Scheme ...	5,350	350	1,230	1,670	2,100
Cattle Feed—World Food Programme 310	300	150	150	—	—
Expansion and Improvement to Livestock Extension Services ...	905	240	265	200	200
Consolidation and Development of Pastures at Palmar and Curepipe Experiment Stations and Purchase of Associated Equipment	135	70	65	—	—
Expansion of Poultry Division ...	200	50	50	50	50
Fodder Storage Trials and Demonstrations	170	20	50	50	50
Machinery and Equipment ...	400	100	100	100	100
Fisheries Development ...	3,154	551	501	1,051	1,051
Skipjack and Shark Fishery ...	850	100	150	300	300
Camaron Hatchery	150	150	—	—	—
Oyster Culture	250	100	50	50	50
Construction of Public Aquarium and Research Laboratory ...	1,500	—	100	700	700
4 Marine Parks	200	100	100	—	—
Vehicles for Fisheries Protection Service	200	100	100	—	—
Research into Offshore Fishing Methods for Whitefish ...	4	1	1	1	1
Administration and General ...	375	247	128	—	—
Improvement to Quarantine at Roche Bois Station	75	75	—	—	—
Incinerator at Airport	30	30	—	—	—
Fumigation Plant at Fort George ...	150	30	120	—	—
Expansion of Stores—Reduit ...	60	52	8	—	—
Extension of Reduit Headquarters ...	60	60	—	—	—

CHAPTER 13

MINISTRY OF CO-OPERATIVES AND CO-OPERATIVE DEVELOPMENT

The provision of finance required by co-operative societies is the responsibility of the Mauritius Co-operative Central Bank. The Ministry of Co-operatives and Co-operative Development has the responsibility for training in co-operative principles in order to impart the Co-operative spirit, provide training in Co-operative principles and practices, help the Co-operative movement to grow and keep control on the development of Co-operatives. The Ministry envisages capital expenditure of Rs 750,000 over the Plan Period in order to establish two Youth Training Farms.

A. Youth Training Farms

2. It is proposed to establish two Youth Training Farms which, with the one farm which has recently been opened, would make possible the traning of approximately 2,000 young people each year in techniques of mixed farming. With the opening of the two farms proposed within the next few years at Richelieu and Nouvelle Découverte, the need for training of basic agricultural techniques to young people from the rural areas of Mauritius, with the emphasis on co-operative farming, will be met. The newly-established farm at Arsenal will draw trainees from the Rivière du Rempart, Port Louis and Pamplemousses area, the proposed farm at Richelieu will draw trainees from the Grand Port, Savanne and Black River area while the third farm will serve the needs of youths from the Moka, Flacq and Plaines Wilhems areas.

3. It is Government policy to increase employment opportunities in the agricultural sector and to ensure that farm land is put to its best use. This project will contribute to both aims. Students will be selected from the list of unemployed youths who are registered at the various Labour Exchanges in the different rural areas. The emphasis of the course will be on practical training, although some theoretical courses will also be given. After successful completion of their training it is planned to settle the trainees on small-holdings to be run on co-operative lines. Crown land will be made available for the establishment of co-operatives.

4. The total capital cost of the programme is Rs 750,000, phased over the first two years of the plan. Each new Training Farm will cover an area of approximately 80 acres. The capital costs comprise land clearing and fencing, the provision of a lecture room and mess room, sheds and stores and the purchase of animals, seeds and tools. It is expected that the Centre at Richelieu, will be completed during the first year of the Plan. The construction of the Centre at Nouvelle Découverte will be started during 1971/72.

MINISTRY OF CO-OPERATIVES

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971—1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL — MINISTRY OF CO-OPERATIVES ...	750	554	196	—	—
Richelieu Co-operative Agricultural Youth Training Centre ...	358	358	—	—	—
Nouvelle Découverte Co-operative Agricultural Youth Training Centre	392	196	196	—	—

CHAPTER 14

MINISTRY OF COMMERCE AND INDUSTRY

The Ministry of Commerce and Industry is chiefly responsible for the promotion of industry in Mauritius, and for encouraging exports from Mauritius. The Ministry also exercises financial control over the capital expenditure of Central Electricity Board and after consultation with it, gives directions of a general character as to the performance of the Board's functions and duties. The day-to-day administration of the C.E.B. lies solely in the hands of the Board. The Ministry plans to spend Rs 2.4 million over the period 1971-75 in furthering the industrial development of Mauritius. The C.E.B. will invest Rs 40.7 million during the same period on its proposed expansion programme.

A. Promotion

2. It is proposed to spend Rs 1 million over the next four years on promotion efforts designed to introduce Mauritius to the world business community as a base for export and component manufacturing activities. The main features of a co-ordinated promotional campaign will be firstly the distribution of information on the facilities, advantages and incentives to entrepreneurs of the Export Processing Zone (established in December 1970) in the form of brochures, advertising, newspaper and trade magazine articles, displays at selected trade and industrial fairs and talks by Mauritian trade attachés abroad to interested organizations. Secondly, there will be the continued identification of possible projects, including their marketing prospects and the publication of project proposal data sheets. However, particular emphasis will be laid on selective industrial promotion efforts, directed at suitable entrepreneurs. This will take the from of the organization of visits to Mauritius of selected, interested businessmen and of approaches through trade attachés abroad or through the Mauritian business community to particular entrepreneurs. The official stated policy of promoting Mauritius abroad as an attractive industrial base will be carried out under the aegis of the Ministry of Commerce and Industry. This will be undertaken through the Promotion Group which is to be formed to undertake these activities. It is therefore proposed to allocate Rs 250,000 per annum to promotion activities.

B. Investigations and Market Research

3. These activities which can be classified under the heading of "Investigations and Market Research" are of course complementary to the Promotion efforts described previously. The Ministry of Commerce and Industry will provide various technical services connected with investigations and market research through two groups which are to be set up specifically for this purpose. It is proposed to establish a Project Formulation and Evaluation Group, whose function will be to identify processes in technically advanced production units which could be replaced by more labour intensive methods and also to identify cases where components could be supplied locally from either existing or potential sources. They will also be responsible for reviewing prospects about the possibility of establishing component manufacturing in Mauritius to industry abroad. Finally, they will be expected to review continuously the progress of integration between new and existing establishments. The second group which is to be set up will be a Data Collection Group and it will be their duty to supply market and other non-technical information to the Project Formulation Group and other Government agencies concerned.

4. The provision of these services, plus the Government's increased involvement in general international trade relations will require a strengthening of specialized personnel to handle the work. Various experts are already available under different Technical Assistance programmes and assistance in connection with sub-contracting and related activities has been requested. The possibility of further Technical Assistance will be explored. It is proposed to allocate Rs 150,000 p.a. for activities connected with investigations and market research.

C. Standards Bureau

5. Economic development has now reached a stage where the establishment of an Industrial Standards Bureau is essential. By constantly comparing our imports and exports with foreign counterparts it would be possible to produce and export better quality goods. The system of standardization and quality control by administering standard marks, and of compliance with standards for exported goods would protect consumers and help industrialists who wish to export. With the present emphasis on production for export, the Industrial Standards Bureau would serve as a national channel for an exchange of information with other manufacturing countries. It would later carry out research for the improvement of local products.

6. The Industrial Standards Bureau will be situated near the School of Technology, University of Mauritius, at Reduit. The project comprises the construction and the installation including equipment and office furniture of a building which will cover an area of 9,400 sq. ft. at an estimated cost of Rs 600,000. It is proposed to establish the Bureau in 1973/74.

D. Administrative Block (EPZ)

7. In order to service the Export Processing Zones in an efficient manner, it is imperative that a separate Administrative Unit be set up, which would take care of the needs of industries established in the Zones. E.P.Z. projects cannot be allowed to suffer delays and prospective investors will expect prompt attention on the part of the authorities concerned. The only way to enable such cases to be dealt with as expeditiously as possible is to house representatives of all Ministries/Organizations which provide the necessary services under one road, as is done in other Free Zones, for example, in Taiwan. Services that are normally required by industrialists are provision of sites, water, electricity, health clearance, municipality clearance, loans, telephone, as well as information about exchange control, customs regulations, labour legislation, freight rates etc. The setting up of an Administrative Block to provide all the necessary services and information on the spot to prospective industrialists will therefore be done, at an estimated cost of Rs 150,000.

8. It is estimated that building with a floor space of approximately 4,000 sq. ft. will be required for the purpose. It will provide office accommodation for an Officer-in-charge, a Confidential Assistant, a Registry, for Officers representing the various Ministries and Organizations, for example the Ministries of Health, Labour, Lands, Customs, Works, the C.E.B., the Municipality, etc., a conference room, a library room, a waiting room etc. At the rate of Rs 30 sq. ft., the building would cost approximately Rs 120,000. A sum of Rs 30,000 has been provided for the purchase of furniture and equipment.

9. For the efficient running of the Administrative Unit, it is necessary that it should be headed by an Officer-in-charge who will be responsible for the administration of the organization but will be accountable to the Minister of Commerce and Industry. The Officers representing tne various Ministries and Organizations should be of a fairly senior status so that they can guide prospective industrialists in their respective fields and also take decisions on the spot, as far as possible.

10. It is estimated that the recurrent expenditure in connection with the staff of the Administrative Block, which will arise as from the financial year 1972-73 will amount to Rs 126,000 per annum.

E. Storage Facilities for Imported Cereals and Food Aid Supplies

11. A warehouse of 100,000 square feet for the storage of cereals imported by the Government and for food aid received from external sources will be constructed during the Plan Period. A provision of Rs 4.0 million for this project has been made under the Ministry of Communications in discussion on harbour development.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—MINISTRY OF COMMERCE & INDUSTRY	2,350	550	400	1,000	400
Trade and Industrial Promotion ...	1,000	250	250	250	250
Investigation and Market Research	600	150	150	150	150
Administrative Block for the Export Processing Zone ...	150	150	—	—	—
Standards Bureau	600	—	—	600	—

CHAPTER 15

MINISTRY OF EXTERNAL AFFAIRS, TOURISM, AND EMIGRATION

The Ministry of External Affairs, Tourism and Emigration intends to undertake two capital projects during the Plan Period 1971-1975, both of which stem from the increased efforts to be made to attract tourists to Mauritius. It is planned firstly to allocate Rs 1.0 million to tourist promotion in order to increase the number of tourists visiting Mauritius. Secondly, if Mauritius is to be able to provide an international standard of service to visiting holiday-makers and businessmen, priority must be given to the training of hotel and catering personnel, and so Rs 525,000 has been earmarked for the establishment of a hotel and catering training centre. In toto, the Ministry of External Affairs, Tourism and Emigration expects to incur capital expenditure of Rs 1.0 million over the next four years, 1971-1975.

A. Tourist Promotion

2. If more tourists are to be made aware of Mauritius and all that it has to offer to holiday-makers, its beaches, its sunshine, its magnificent scenery, its unique culture, its festivals, etc., they must have ready access to information about the Island. Tourist promotion measures will therefore be concentrated abroad. They will take the form of small tourist offices, probably attached to embassies, from which publicity campaigns can be undertaken. Some degree of flexibility will have to be allowed for in the actual strategies to be followed, so that the more successful tourist promotion measures can be pushed further and the less successful ones dropped. This will be largely a matter of judgment, drawn from experience, but whatever the final direction of tourist promotion efforts, as inferred from the initial policies, it is felt that a minimum capital expenditure of Rs 600,000 over the years 1971-1975 must be planned for. In addition, a further Rs 415,000 is to be allocated in the first year of the Plan so that reprints can be made of certain pamphlets and booklets which provide tourist information about Mauritius; so that new publications, such as a tourist road map and posters, can be printed and also to cover the cost of making a few films and slides.

B. Hotel and Catering Traning Centre

3. The existing hotel industry in 1970 consisted of 23 hotels and boarding houses with a total number of 900 beds, out of which only three establishments with a total number of 400 beds could be considered to be of an acceptable international standard. During the period 1971-1975, more hotels will be established.

4. The present standard of food and service in the hotel and catering industry, generally speaking, is not up to international standards, one of the prime reasons being that virtually none of the hotel and catering personnel have received any form of professional training. Since the success or otherwise of a tourist industry rests largely on the quality of service provided by its personnel, it is planned to train such personnel in sufficient numbers to meet the estimated requirements of the industry by 1975.

5. It is proposed to convert the Mascareignes Hotel in Curepipe, which is presently operated only periodically as an emergency hotel into the Training Centre, since besides being the most appropriate type of building to use for hotel and catering training courses, it has the further advantage of requiring only minor alterations before being suitable for use as the Training Centre. It is expected that the Centre will start operating in 1972. The training programme for the Centre is to be drawn up by an ILO expert and it will include regular courses for basic level personnel in the four main hotels and catering specializations, i.e. front office, kitchen, restaurant and bar and housekeeping and floor. For the first two categories it is proposed that the course proper should last nine months at the Centre, followed by a three-month practice stage in an hotel, while for restaurant and bar personnel it is proposed that they attend for six months at the Centre followed by a three-month practice stage in an hotel or restaurant, and for housekeeping and floor a four-month training period at the Centre plus a three-month practice stage in an hotel should be sufficient.

6. In addition to the regular programme outlined above there will be other, short term, courses offered, such as updating and refresher courses for the existing personnel of the industry, a course of mixed training in cooking, service and housekeeping for twelve students of the Sea Training School twice a year, etc. The Centre will also be prepared to give advisory and practical assistance to hotel and restaurant enterprises concerning organization, staffing, etc.

7. For the period July 1972 to December 1975, the expected number of personnel whom it is hoped to train as part of the regular programme is 364, of whom 60 will be front office, 60 kitchen, 112 restaurant and bar and 132 housekeeping and floor. The total estimated capital cost

of establishing the Hotel and Catering Training Centre is Rs 525,000 of which Rs 50,000 refers to building repairs, Rs 430,000 to equipment, supplies, transport, insurance costs, etc. and Rs 45,000 to the purchase of vehicles.

8. Because of the financial constraint arising from the recurrent revenues during the Plan Period, the recurrent costs of running the school will have to be shared by the industry.

C. Emigration

9. It has been Government policy to help Mauritians to find jobs outside the country. In order to pursue this policy on scientific lines, and taking into consideration the interests of the economic development of the country and of those people who cannot find work in Mauritius, it will be necessary to carry out a general survey. The survey will determine the category of labour force which can be encouraged to emigrate and also include the nature of jobs available in countries willing to accept such emigrant on short and long term basis.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971-1975

(Rs 000)

	Total Expenditure 1971-1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL	1,540	510	630	200	200
Hotel Training School	525	95	430	—	—
Promotion of Tourism	1,015	415	200	200	200

CHAPTER 16

MINISTRY OF LOCAL GOVERNMENT

There are a large number of labour intensive projects pertaining to the social and economic development of different regions of the country. These projects have been prepared with the active co-operation of the District Councils and Municipalities. Because of the nature of the projects they have been included under the T-P-T programme. Although it is difficult to make a specific breakdown of the expenditure by project, it should be emphasized that a large part of the expenditure under the T-P-T programme pertains to District Councils and Municipalities. The projects will be undertaken by the Development Works Corporation, in consultation with the local authorities. But, whenever it will be convenient, in regard to administrative and technical capacity, the work will be undertaken by the Local Authorities themselves under the general supervision of the Development Works Corporation.

2. The local authorities will also receive revenue from the Central Government in the form of capital grants, amounting to Rs 1.5 million over the Plan Period, to enable them to undertake the projects which are not suitable for inclusion in the T-P-T programme.

3. The major protection of District Councils and Municipalities falling under the T-P-T programme are briefly described below. Details are given in Chapter 17. The " Travail pour Tous " Programme.

A. Land Development for Industrial Sites and Public Housing Sites

4. A total of Rs 10.5 million has been allocated for the development of about 250 acres for Industrial and Public Housing sites during the Plan Period. Most of the industrial areas will be situated within the Municipalities.

B. Fruit Tree Plantations and Nurseries

5. A total expenditure of Rs 11.5 million is foreseen for the creation of nurseries and the planting of fruits trees along roadsides, river banks and slopes of mountains and plantation of land to fodder, afforestation etc. during the Plan Period. Large stretches of land particularly in the rural areas which at present are lying idle, will thus be brought under production.

C. Construction of Roads, Drains and Bridges

6. A provision of Rs 31.5 million is made in the Plan, for the widening, alignment, improvement and strengthening of roads—main, urban and rural—the construction of 10 miles of new roads on the coasts, the construction of footpaths, the construction or strengthening of bridges; and the construction and repairs of drains.

D. Public Buildings

7. A sum of Rs 1.5 million will be spent during the Plan Period on the construction of simple buildings needed at both the central and local government levels namely, village halls, market places, social centres, post offices, civil status offices, staff quarters, etc. Of the total amount, Rs 1.0 million will be spent in the first year.

E. Workshops

8. A provision of Rs 0.5 million has been made for the construction of artisanal workshops. One unit will be established in each district and one in each of the Municipalities of Plaines Wilhems.

9. As indicated in the Chapter on "Travail pour Tous," the Development Works Corporation will draw up and modify its programme of work as and when necessary. It would thus be able to include such items as the construction of stadiums, swimming pools, other recreational facilities, public conveniences, as well as the development of beaches, etc., after working out the feasibility of these projects.

CHAPTER 17

THE "TRAVAIL POUR TOUS" PROGRAMME

The T-P-T programme is an integral part of the development plan, designed to get Mauritius out of a chronic unemployment situation that has developed over the past decade and which would otherwise become even more acute over the next decade. The main objectives of the programme are:

(i) to provide employment and incomes for those families whose bread-winners cannot immediately find work elsewhere in the economy;

(ii) to eliminate much of the sub-marginal employment that has grown up over the last ten years or so as the result of the excess in the growth of the labour force over the level of the employment opportunities in the established field of economic activities;

(iii) to capitalise the present abundance of labour (not all of it by any means unskilled) in order to create investment which will be productive but which would not ordinarily be justified in relation to the labour input required, judged by conventional investment criteria.

2. The programme is a " package deal " which includes projects that are directly productive, indirectly productive as well as some socially essential projects. Directly productive projects are mostly in the field of land preparation for crop and livestock production, reafforestation, the establishment of fibre plantations, orchards and seedling nurseries, destoning of cane lands and replanting with sugar cane and other crops, creation of fish ponds etc. The indirectly productive projects are site development for industry, roads etc. The socially beneficial projects are the construction of primary school classrooms, urban and rural amenities and other community development activities.

3. The total cost of the programme over the Plan Period amounts to Rs 123.1 million of which Rs 52.0 million represent the costs of equipment and materials and Rs 71.1 million wages and salaries. The wages consist of approximately 60 per cent in cash and 40 per cent in kind (food).

4. The programme will be the responsibility of the newly created Development Works Corporation. But whenever it will be convenient in regard to administrative and technical capacity, the work will be undertaken by the Local Authorities themselves under the general supervision of the DWC.

5. It is foreseen that the programme will wither away after a few years through the creation of more remunerative employment opportunities.

PROJECT CLUSTERS AND PHASING

6. The types of projects to be carried out under the "Travail pour Tous" programme are briefly described below. The Development Works Corporation will draw up, and modify, its programme of work as it goes along. In order to indicate the nature and balance of the programme as a whole as between different types of activities, a preliminary indication of employment, expenditure on materials and equipment and the phasing of works by project clusters over the next four years is given in Tables I, II and III. The parts of the programme which will be started immediately are:

primary school classrooms
afforestation
land development for one industrial estate
construction of workshops

A. Replanting of Cane Areas

7. There are 23,000 acres of land planted with varieties of sugar cane which are highly susceptible to gummosis and present a threat to cane yields in the sugar industry as a whole. The Government has decreed that these varieties will be uprooted by 1974 at the latest. The replanting of this area is over and above the normal replanting that takes place every year. T-P-T workers will be put on this project and opportunity will be taken to clear the land of rocks and boulders. High yielding and disease resistant varieties of sugar cane, available from the estates and the nurseries of the Mauritius Sugar Industry Research Institute will be introduced on these lands. The project requires some 140,000 man-months of labour. Costs of equipment and materials are estimated at Rs 17 million. It is estimated that, as a result of the project, the production of sugar cane in the area would increase by at least 10 metric tons per acre.

B. Land Development for Crops and Livestock

8. There are about 1,300 acres of scrub land at Midlands and small patches of scrub and marshy lands elsewhere, making a total of 2,000 acres which can be immediately developed for crop production. These areas will be developed for the cultivation of rice and other crops as well as for the rearing of livestock. The project includes the reclamation, levelling, and clearing of land; layout of irrigation works and channels,

drainage system, irrigation and fish ponds, roads, residential blocks, workshop and processing sites. An optimum cropping pattern incorporating the intensive use of land under profitable crops and livestock enterprises will be evolved; modern technology in agricultural production will be introduced and ancillary agro-industries will be set up for the processing, preparing and marketing of crops and animal products as well as the by-products. Eventually, the land will be leased to small holders for cultivation. The land preparation stage will be carried out by T.P.T. workers: estimated employment is 55,000 man-months and costs of materials and equipment Rs 1.5 million. The production of foodcrops and livestock produce will result in important savings of foreign exchange on imports.

C. Land Development for Industrial Sites and Public Housing Sites

9. The policy of industrialization to combat unemployment has been accepted by the Government and the zoning schemes published by the Town and Country Planning Board reflect this objective. Industries so far established in Mauritius have concentrated in Port Louis owing mainly to the availability of Crown land and adequate infrastructure there. However, a certain amount of decentralization of industry is desirable in the context of overall national economic development and the Export Processing Zone Scheme put forward by the Government permits this decentralization. One of the basic factors in promoting industrial development is the availability of suitable industrial plots and to some extent at least, buildings. This has been included in the incentives package designed for the Export Processing Zone Scheme.

10. A total of 614 acres of land are available for development as industrial sites, located as follows:

	Acres
Coromandel	60
Plaine Lauzun	14
La Cure	50
Mer Rouge Reclamation	250
TOTAL PORT LOUIS	374
Curepipe	100
Vacoas–Phœnix	50
Rose Hill (Chebel)	35
Quatre Bornes	25
Other (scattered sites)	30
TOTAL	614

11. About 250 acres of the land would be required to meet the expected demand during the Plan Period 1971-1975. T-P-T workers will be used to undertake parts of the site development, e.g. clearing and levelling, water supply and sewerage.

12. Provision has also been made for the development of public housing sites.

13. The costs of equipment and materials will amount to Rs 5 million and it is estimated that 55,000 man-months of labour will be required.

D. Afforestation and Aloe Plantations

14. Besides the maintenance and nursing of existing forest plantations, a further 6,000 acres of new forests will be created in the Plan Period. Aloe will be planted in the interlines of eucalyptus, this will help in cutting down the costs of collection of aloe leaves. New forest roads will also be constructed for better opening of forests and improved exploitation. The envisaged forestry development programme will provide stimulus to match manufacturing, saw milling, timber, joining, furniture making and allied industries.

15. A National Park will also be created at Mare-aux-Vacoas or the Black River Gorges, a place of great natural beauty. This will be a great amenity for the people of Mauritius and a significant tourist attraction.

16. Total employment in the afforestation programme will be of the order of 160,000 man-months, whilst equipment and materials will cost Rs 3.0 million.

B. Fruit Tree Plantations and Nurseries

17. The project is designed to bring under production, the long stretches and patches of land lying idle at present. Fruit trees will be planted along roadsides, riverbanks and on the slopes of mountains. Nurseries will also be created for the raising of young plants, part of which would be offered for sale to the public at low prices. Among the trees to be planted are the following: mangoes, letchis, coconuts, citrus, spices, bread fruit and jack fruit. The production of fruits and spices will be for both local consumption and export. Employment in this project is estimated at 100,000 man-months, whilst equipment and materials will cost about Rs 1.5 million.

F. Fish Ponds and Lagoon Fisheries

18. The development of inland and lagoon fisheries will be carried out under the T-P-T programme especially as the creation of fish ponds and the improvement and construction of " barachois "* are labour intensive.

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*artificially enclosed areas of the lagoons.

19. Swampy areas, mostly localised around Midlands and the valley of river Citron will be reclaimed for the construction of 3 to 5 acre shallow ponds for intensive fish culture. About 100 such ponds with a total area of about 400 acres will be constructed. The total annual catch of fish when in full operation would amount to about 80—100 tons (valued at Rs 240,000—Rs 300,000).

20. Twenty existing barachois with a total area of 600 acres need clearing and repairs to walls and sluice gates. There are a dozen other sites along the coast which are suitable for marine farming. An additional 2,500 acres of the lagoon will be converted into barachois in the Plan Period. Production from marine fish farming, when in full operation, will be about 400 tons anually.

21. The ponds and barachois will be leased on a long term basis to fishermen grouped into co-operatives. The enterprises will be run on a commercial basis, employing about 500 people.

22. A third project is the combined rearing of fish in fish ponds with units of six pigs attached to one acre of fish pond for the partial feeding of the fish. The fish ponds, one acre in size, will be sited close to running streams. Cassava and sweet potatoes will be planted for the feeding of the pigs. One hundred such units will be created and one family will be settled on each unit. Revenue from such a unit has been estimated at Rs 5,400 per year.

23. The labour requirements for the execution of all three projects are 10,000 man-months over the Plan Period. Cost of equipment and materials will amount to Rs 0.6 million.

G. Roads

24. The project consists of the widening, alignment, improvement and strengthening of 200 miles of main roads, 100 miles of urban roads, and 300 miles of rural roads; the construction of about 10 miles of new roads along the coast line in the north and south and in the industrial areas, the construction of footpaths four feet wide along 80 miles of roads where traffic is heavy; the construction, or strengthening of 50 bridges and the erection of about 800 road signs to international standard in the interests of the general public and tourism.

25. Farm roads will also be constructed in the tea development areas on the Central Plateau and other agricultural development areas in the Northern Plains and Western region. This will facilitate the transport of agricultural produce from the fields to the factories or the markets.

26. Provision is made for 150,000 man-months of labour and Rs 16.5 million for the purchase of equipment and materials for the work to be executed under the T-P-T programme during the Plan Period.

H. Building of Primary School Classrooms

27. There are at present 176 Government and 50 aided Primary schools in Mauritius. The total enrolment in 1970 was 142,000. However, due to lack of classrooms, 800 classes are operating on shift i.e. 400 classes study in the morning till noon, when the classrooms have to be made available to 400 other classes in the afternoon. Education of the children suffers greatly in these circumstances. 400 new classrooms will therefore be constructed to eliminate the shift system. No extra recurrent expenditure on the salaries of teachers will be required since the teachers working at present on shift are already being paid.

28. A further 125 additional classrooms will be built to overcome the problem of overcrowding in primary classes. The size of classes will thus be reduced from 50 to 45 in the junior sections and to 40 in the senior sections.

29. On completion of the project full-time education to school children will be provided instead of the present 3½ hours per day. This will enable the inclusion, in the school curriculum of important subjects such as Elementary Science, Environmental Studies, Civics, Physical Education, Gardening and Music.

30. Labour requirements of the project are 20,000 man-months phased over three years. Costs of materials and equipment are estimated at Rs 4 million.

I. Public Buildings

31. There is a need, at both the central and local government level, for quite simple buildings, to be constructed largely by unskilled or semi-skilled, and at present unemployed, labour using mostly local materials, which again are largely labour costs, if the supply of these materials is properly organised. The import component would be around 20 per cent of the total costs, mostly cement and steel. A modest programme of public buildings is therefore included in the T-P-T programme. Among the buildings to be constructed are village halls, market places, post offices in rural areas, civil status offices, staff quarters, garages for the Riot Units etc.

J. Workshops

32. A dozen artisanal workshops will be constructed, one in each district and one in each of the municipalities of the Plaines Wilhems. Initially these workshops will manufacture furniture for the additional primary school classrooms to be built under the Education Project. Eventually the workshops will be leased to the artisans grouped into co-operatives and will be run on commercial lines. Fifteen to twenty people will be engaged permanently in each centre. Two hundred permanent jobs will thus be created.

33. Labour requirements for the construction of these workshops are about 1,000 man-months. Costs of equipment and materials will amount to about Rs 400,000.

TABLE I

T-P-T—Total Investment

(Rs Million)

	Total	*1971-72*	*1972-73*	*1973-74*	*1974-75*
1. Replanting Cane Areas ...	31.0	4.2	9.0	11.0	6.8
2. Land Development for Crops and Livestock	7.0	0.7	1.9	2.5	1.9
3. Land Development for Industrial Sites and Public Housing Sites	10.5	1.0	2.2	4.3	3.0
4. Afforestation, Aloe Plantations ...	19.0	2.5	5.0	6.0	5.5
5. Fruit Tree Plantations and Nurseries	11.5	1.0	3.2	3.9	3.4
6. Fish Ponds and Lagoon Fisheries	1.6	0.3	0.4	0.5	0.4
7. Roads	31.5	4.4	5.6	11.0	10.5
8. Primary School Classrooms ...	6.0	1.5	3.0	1.5	—
9. Public Buildings in Rural Areas	4.5	1.0	1.4	1.2	0.9
10. Artisanal Workshops ...	0.5	0.2	0.3	—	
TOTAL ...	123.1	16.8	32.0	41.9	32.4

TABLE II

T-P-T—Employment, Man-Months

	Total	*1971-72*	*1972-73*	*1973-74*	*1974-7*
1. Replanting Cane Areas ...	140,000	12,000	40,000	50,000	38,000
2. Land Development for Crops and Livestock	55,000	5,000	15,000	20,000	15,000
3. Land Development for Industrial Sites and Public Housing Sites...	55,000	5,000	12,000	18,000	20,000
4. Afforestation, Aloe Plantations ...	160,000	20,000	40,000	50,000	50,000
5. Fruit Tree Plantations and Nurseries	100,000	8,000	28,000	34,000	30,000
6. Fish Ponds and Lagoon Fisheries	10,000	1,500	2,500	3,000	3,000
7. Roads	150,000	14,000	26,000	55,000	55,000
8. Primary School Classrooms ...	20,000	5,000	10,000	5,000	
9. Public Buildings in Rural Areas...	20,000	4,000	6,000	5,000	5,000
10. Artisanal Workshops ...	1,000	500	500		
TOTAL ...	711,000	75,000	180,000	240,000	216,000

TABLE III

T-P-T—Equipment and Materials

(Rs Million)

	Total	1971-72	1972-73	1973-74	1974-75
1. Replanting Cane Areas ...	17.0	3.0	5.0	6.0	3.0
2. Land Development for Crops and Livestock	1.5	0.2	0.4	0.5	0.4
3. Land Development for Industrial Sites and Public Housing Sites ...	5.0	0.5	1.0	2.5	1.0
4. Afforestation and Aloe Plantations	3.0	0.5	1.0	1.0	0.5
5. Fruit Tree Plantations and Nurseries	1.5	0.2	0.4	0.5	0.4
6. Fish Ponds and Lagoon Fisheries	0.6	0.1	0.2	0.2	0.1
7. Roads	16.5	3.0	3.0	5.5	5.0
8. Primary School Classrooms ...	4.0	1.0	2.0	1.0	—
9. Public Buildings in Rural Areas	2.5	0.6	0.8	0.7	0.4
10. Artisanal Workshops ...	0.4	0.2	0 2	—	—
TOTAL ...	52.0	9.3	14.0	17.9	10.8

CHAPTER 18

RODRIGUES

It is proposed to undertake a capital investment programme in Rodrigues over the Plan Period of Rs 33 million. The most important part of the programme is in greatly expanding the labour-intensive programme of land development, which accounts for Rs 11.5 million, or approximately one third of the total capital investment planned in Rodrigues over the next four years. In toto, it is proposed to undertake projects to a value of Rs 18.6 million in Agriculture, Rs 8.8 million in Infrastructure, Rs 3.4 million in Social Services and the balance of Rs 1.6 million on other items.

A. Agriculture, Livestock and Fisheries

2. Almost two thirds of the proposed capital expenditure under this heading will be directed towards projects designed to raise the productive capacity of the agriculture, livestock and fisheries of the Island, at a total combined cost of Rs 18.6 million. The major self-contained project will be the terracing of some 4,000 acres of arable land to combat erosion, the digging of drains on the steeper slopes, the construction of check dams in the depressions and the construction of access roads. This is very labour intensive work and will provide employment to 1,200 workers per annum over the four years: most of the cost of carrying out these land improvement works, which involve a sum of Rs 11.5 million, are comprised of the cash wages and food supplies to the workers employed on the project. Farmers will then be re-settled on the land which has thus been stabilized by terraces. They will be organized into groups of 10 to 20 and will put to work on their own farms using approved farming techniques. Each of these groups will have a small pool of equipment, including a sprayer and rotovator, which would be maintained by the new workshop to be built at Citronelle. It is estimated that it will cost Rs 400,000 over the Plan Period in order to purchase the required sprayers, pesticides and rotovators for co-operative use. It is intended that some 400 farmers per year will be resettled in the next five years and an increase in extension staff must be planned for to ensure that farming systems with productivity and permanence take hold.

3. Also, in order to restore and maintain soil fertility, there must be use made of chemical fertilizers, both on crops and pastures. For the farmers to get used to the use of chemical fertilizers, an element of subsidy will be essential. A sum of Rs 500,000 for such a subsidy over the Plan Period has therefore been allowed for. Co-operative credit will also be extended for fertilizers.

4. It is proposed to improve livestock production by a group of concerted measures. There will be a policy of establishing pasture grasses and eradicating weeds to replace indigenous grasses, and it is considered necessary to carry out physical improvements to the cattle walks, through the erection of fences and the provision of watering points. There are six livestock breeding centres in Rodrigues which will also be used as demonstration centres for improved livestock rearing methods. Some Rs 300,000 will need to be spent over the Plan Period on the physical remodelling and improvement of these centres and a further Rs 300,000 on importing stud boars, rams and bulls and female stock for upgrading the local stock.

5. Rodrigues has an extensive shelf, although the fish catch could be increased considerably by increasing the fishing effort beyond the coral reefs surrounding the Island. It is therefore proposed that eight 34-40 feet boats be constructed in Rodrigues which would be capable of towing a number of smaller boats to the banks, and to which the smaller boats would deliver their catches, and also a few 26 feet boats with engines operating on their own be constructed. The boats would be owned originally by the Rodrigues Co-operative, but fishermen would be allowed to purchase a boat by instalments. It is considered that four salting plants should be put up to process the increased fish catch, since the drying and salting methods currently employed are poor. Including improvements to fish harbours and moorings the total investment required to increase the volume of fish caught and to process it in a more satisfactory manner is estimated at Rs 1.0 million over the next four years.

6. Capital investment in agriculture and fishery projects can only make possible higher productivity and greater output, it cannot ensure it. The success of the measures proposed to bring about development of the livestock and fishery industries will depend on the producer receiving a sufficient proportion of the retail value of his produce to induce him to put in the additional labour and cash expenditure to achieve higher levels of output. At present the producer in Rodrigues is receiving only half the retail price at which his produce sells in Mauritius. For pigs, which are the main export, the price received by the producer is 40 per cent of the retail value. Only a part of the difference is accounted for by necessary transport and distribution costs. The creation of a strong marketing co-operative is therefore an essential component of any programme for increasing agricultural production. The initial capital costs for the Co-operative, which will start with handling livestock sales, are estimated at Rs 400,000.

7. In order to back up the major efforts which will be made to raise agricultural incomes, productivity and output, there will be an intensification of training and education measures. Lack of knowledge is the greatest obstacle to development and both extension work and provision of suitable education must be given prominence. A small expenditure of Rs 25,000 will be made on improving facilities at the Agricultural Training Farm. It is also proposed to establish an Adult Training Centre at Maréchal, in order primarily to give instruction in basic reading and writing, but also to give simple agricultural courses. A provision of Rs 100,000 is made to set up the necessary buildings and facilities, to be finished by the end of the Plan Period.

8. There are a group of small expenditures required by the agricultural sector which form a part of the overall programme; it is considered desirable that afforestation of denuded areas is continued steadily over the Plan Period, as part of the programme of combatting erosion and restoring fertility to the soil. Then there will be an expansion of irrigation water supplies, the purchase of agricultural machinery and equipment and the provision of housing for agricultural staff. The total estimated cost of all these items over the Plan Period is Rs 2.4 million.

B. Infrastructure

9. A sum of Rs 8.8 million will be spent over the Plan Period on improving infrastructure in Rodrigues, approximately one quarter of total estimated capital expenditure over the period.

10. Rodrigues has no supply of treated drinking water and it is proposed to spend Rs 1.5 million on improvements to dams and reservoirs, on providing filtration and chlorination plants, storage water tanks and on laying additional pipelines, so as to extend the supply of treated drinking water to the population as fast as can be afforded. A further Rs 100,000 will be spent on ground water installations to increase the capacity of the water supply system.

11. It is intended to spend Rs 1.8 million on new road construction on the Island over the Plan Period, including a road to the new airstrip, which is being constructed at Plaine Corail. The airstrip, which will improve communication between Rodrigues and Mauritius considerably, is to be completed in the first year of the plan at an estimated cost of Rs 570,000.

12. Electricity is at present being supplied on the Island by two private contractors and Government generates a part of its own electric power requirements. To ensure an adequate service and coverage, the supply of electric power for the Island will be undertaken by the Central Electricity Board. The capital cost of generating plant and transmission will amount to Rs 2.3 million.

13. All goods and passengers from and to Rodrigues are carried on the M.V. *Mauritius* which calls at Port Mathurin about twelve times a year. Goods and passengers are carried from ship to jetty in barges and launches. Equipment for harbour reclamation, loading and unloading equipment, the extension of the jetty, the construction of oil storage tanks and landing containers (for diesel fuel), the construction of a transit shed, workshop equipment and the provision of navigational lights will cost Rs 2.2 million.

14. Radio reception of broadcasts from Mauritius is poor in Rodrigues and to improve the reception, a relay station will be built in Rodrigues at a cost of Rs 100,000. An additional Rs 60,000 will be required for a small broadcasting studio so as to be able to transmit local broadcasts at certain times of the day. Finally, a public telephone service, will be installed in Port Mathurin at a cost of Rs 140,000 and two small post offices at La Ferme and Grande Montagne will be established at a total cost of Rs 24,000.

C. Social Services

15. Education facilities in Rodrigues are to be improved by expenditure of Rs 1.7 million over the Plan Period. This will cover the construction of a self contained block which will house a library and laboratories to be used by the 6th Forms of the two secondary schools, additional classrooms and general improvements to existing primary and secondary schools, the construction of three new primary schools and the purchase of equipment for the schools.

16. In health, expenditure of Rs 1.8 million is foreseen over the Plan Period. Two small cottage hospitals will be built at Mont Lubin and La Ferme to replace the existing structures, at a cost of Rs 700,000 and housing for hospital staff will be provided for a further Rs 200,000. There will be a new ward and facilities added at Queen Elizabeth hospital and additional equipment, lighting plants, wireless equipment for the health service provided at a total cost of Rs 444,000. Lastly, it is necessary to purchase three ambulances, to provide a garage for them and to expand the housing facilities for general medical staff.

17. There are a few centres of population on the Island but for the most part Rodriguans live in scattered households. Because of the increasing pressures of population on the land, it will be necessary to reserve agricultural land for use by full-time farmers and group those who are not full-time farmers into villages, with small homestead plots on which they can grow their own vegetables and keep a few pigs and poultry. Four such villages will be established during the Plan Period at a cost of Rs 1.0 million.

18. A sum of Rs 200,000 will be spent on setting up a road transport workshop at Citronelle, which will also service plant used in road maintenance and construction and agricultural machinery. The Marine Workshop at Port Mathurin will then be able to confine its work to the repair and servicing of marine engines and equipment used in marine transport and harbour work.

19. Finally, provision has been made for the construction of housing for Government staff, since there is no alternative accommodation on the Island. A sum of Rs 420,000 has been provided for the construction of housing for Government officials over the Plan Period.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—RODRIGUES ...	32.544	7,270	8,714	8,990	7,570
A. AGRICULTURE ...	18.625	3.850	4.375	5.025	5.375
Land Development	11.500	2.500	2.800	3,000	3,200
Crop Production	400	100	100	100	100
Fertilizer Subsidy	500	125	125	125	125
Irrigation Water Supplies ...	1.250	250	300	300	400
Livestock Breeding Centres ...	300	75	75	75	75
Purchase of Livestock	300	75	75	75	75
Pasture Development	1.750	200	400	550	600
Re-afforestation ...	500	100	75	150	175
Machinery and Equipment ...	400	100	—	150	150
Co-operative Marketing and Production	400	100	100	100	100
Agricultural Training Farm ...	25	25	—	—	—
Adult Training Centre	100	—	50	50	—
Fisheries	1,000	150	225	300	325
Housing for Agricultural Staff ...	200	50	50	50	50
B. INFRASTRUCTURE ...	8,865	2,758	2.562	2.120	1,425
Domestic Water Supplies ..	1.500	375	375	375	375
Ground Water Installations ...	100		100		—
Roads	1,850	500	350	450	550
Telecommunications ...	324	172	152		
Relay Station	100	100			
Local Studio	60	60	—		
Telephone Service	140	—	140		
2 Post Offices	24	12	12		
Airstrip ...	570	570			

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
Port Services ...	2,221	441	885	695	200
Harbour Reclamation	1,520	420	500	400	200
Workshop Equipment	11	11	—	—	—
Oil Discharging Pier	10	10	—	—	—
Containers for Conveyance of Fuel from Ships	200	—	200	—	—
Oil Storage, Tanks and Equipment	100	—	100	—	—
Extension to Jetty	250	—	—	250	—
Cyclone Moorings for Tugs & Barges	25	—	—	25	—
Transit Shed	85	—	85	—	—
Navigational Lights	20	—	—	20	—
Electricity ...	2,300	700	700	600	300
C. SOCIAL SERVICES ...	3,434	612	1,127	1,275	420
Education ...	1,680	240	610	560	270
Self-contained 6th Form Block Library Laboratories ...	300	—	250	50	—
3 New Primary Schools ...	660	—	220	220	220
Improvements to Existing Primary Schools	380	100	80	150	50
Improvements to Existing Secondary Schools	200	100	—	100	—
Equipment	140	40	60	40	—
Health	1,710	372	473	715	150
Two Cottage Hospitals at Mt. Lubin and La Ferme	700	350	—	350	—
Housing for Hospital Staff ...	200	—	100	100	—
Equipment	160	—	160	—	—
Lighting Plants	30	15	—	15	—
New Ward and Facilities, Queen Elizabeth Hospital ...	250	—	—	100	150
3 Ambulances	63	—	63	—	—
Wireless Equipment	4	4	—	—	—
Garage for Ambulances ...	3	3	—	—	—
Housing for Medical Staff ...	300	—	150	150	—
D. OTHER					
Housing for Government Staff ...	420	—	200	220	—
4 Villages	1,000	50	250	350	350
Road Transport Workshop ...	200	—	200	—	—

CHAPTER 19

PARA-STATAL ORGANIZATIONS

The major para-statal organizations intend to carry out a capital investment programme of about Rs 120 million over the Plan Period. A sum of Rs 1.0 million has been included for total capital expenditure by other para-statal organizations which have not yet formulated their programmes definitely.

A. Central Electricity Board

2. The Central Electricity Board proposes to carry out a capital investment programme of Rs 40.7 million over the Plan Period in order to increase the supply of electricity to meet the country's anticipated industrial and commercial expansion over the period, to resume the rural electrification programme and to make other alterations to render the generation and transmission of electricity more efficient. Some 1,425 new consumers will be linked yearly to the main electricity system under these schemes.

3. The major expenditure will be on raising transmission capacity by the construction of new feeder lines from the main to the sub-station, the construction of new sub-stations and the improvement of existing stations. Voltage conditions will be improved at the St. Louis sub-station and in order to supply the fertilizer plant at Fort George and to relieve the sub-station at Poudrière, a double circuit line will be constructed from St. Louis to a new sub-station to be erected at Military Road in 1971, and the following year a double circuit line will be constructed from the Military Road Sub-Station to Fort George.

4. With the expected rate of growth of industrial activity in the Port-Louis area, it is felt that sub-station and transmission lines should gradually change over from operating at 22 KV. to 66 KV., in order to be able to meet the anticipated rate of growth of demand for electricity. Over the Plan Period there will be a continuous programme of change-over in Port Louis, beginning in 1972 with the St. Louis to Wooton line, followed in 1973 by the cable connection between Fort Victoria and St. Louis and in 1974 by the Ferney Wooton line, and the St. Louis Nicolay — Fort George line.

5. Other planned improvement to transmission include the construction of a new sub-station at St. Jean in order to supply electricity to Quatre Bornes and reduce the present load on the Rose-Hill Sub-Station; the conversion of the high tension network in Mahebourg and Pointe d'Esny

from 6.6 KV to 22 KV., and the erection of a 22 KV. line between Le Morne and Chemin Grenier. The cost of these major capital works, plus a few minor miscellaneous items included in the overall programme is Rs 12.9 million.

6. It is proposed to carry out two major reconstruction works. The existing power station of 600 kilowatts at Reduit is to be reconstructed to have a generating capacity of 1,500 kilowatts and at Fort Victoria power station three medium speed engines of 6 megawatts each, which could be extended to 50 megawatts in total, are to be installed. The total estimated cost of these capital works over the Plan Period is Rs 11.3 million.

7. Proposed improvements to the distribution network including an extension to the existing network to supply new domestic, commercial and industrial consumers, plus the installation of lead-ins and meters: the erection of service cables in those areas where a future extension of distribution is envisaged; the extension of a high and low tension network to rural areas and the reconstruction of old and obsolete networks where necessary, for example, the replacement of copper services by insulated P.C.P. and concentric cables, since these are subject to damage by cyclones. It is estimated that expenditure of Rs 14.0 million will be incurred in carrying out these improvements to the distribution network over the next four years.

8. The C.E.B. officers at Souillac, Pamplemousses and Rose-Hill are in rented buildings and the C.E.B. will erect its own offices at these places during the Plan Period. Due to its expanding activities, the Head Office at Curepipe will have to be extended an additional furniture and equipment provided. Some motor vehicles will be replaced. The total costs of those miscellaneous items is Rs 2.5 million. Consideration will be given to the building of a dam at Soreze during the Plan Period, which would provide hydro electric power to Port Louis and supplement the supply from the St. Louis thermal power station and would also improve the domestic and industrial water supply.

B. Tea Development Authority

(i) TEA DEVELOPMENT PROJECT

9. Prior to 1964, tea cultivation was almost exclusively in the hands of privately owned estates. In that year the Government launched the first phase of a smallholders' tea development programme with the aim of planting between 5,000 to 5,250 acres to smallholder tea by the end of 1970. The present tea development project is the second phase of the Government's smallholder tea development programme and it proposes to extend the existing tea acreage by 5,600 acres over the three years as from July 1971, with IBRD participation.

10. The project is to be organized under a newly created Mauritius Tea Development Authority, which would have responsibility for all development aspects of smallholder tea in Mauritius. Its first job will be the

clearing of the designated project area in the central uplands of the Island, which is Crown Land that is presently largely under scrub forest. Operations to be carried out are bulldozing, first raking, ripping and small raking. At the same time the tea nurseries are established and seedlings raised and subsequently thinned out and the stumps are planted in the field and raised to the stage where they become mature tea bushes. In the fourth year after planting, the established tea land will be leased to smallholders in units of 1½ to 2 acres.

11. The total cost of the project is estimated at Rs 44 million, of which, Rs 34.4 million falls within the Plan Period 1971-1975. The Tea Development Authority will be empowered to levy a cess on smallholder tea production sufficiently large to cover all its operating costs and to repay development expenses without interest over a period of thirty-two years. Costs will be incurred for land clearance and for the maintenance of the area already planted but not yet handed over to smallholders for nursery establishment and also for the construction of two new tea factories, each with a capacity of 3 million lbs of made tea to process the tea produced under this scheme. It is further intended to establish tea villages for the smallholders and their families but provision for the cost of these, and responsibility for their construction, rests with the Ministry of Housing, Lands and Town and Country Planning.

12. It is expected that the project would increase Mauritius' tea production by 8½ million lbs of made tea annually valued at Rs 14 million.

13. The Government has pledged itself to planting 2,000 acres of tea per year over the period July 1974 to July 1976. The IBRD have indicated that they would be interested in participation in this second stage of the project, if clonal material can be raised successfully, so that the present method of planting seedlings in the nurseries can be replaced by planting cuttings. Therefore emphasis into research into clonal material will be given to the work at the Wooton Research Station over the next three years. The additional costs, falling within the Plan Period in continuing to expand tea acreage by 2,000 acres a year are a further Rs 3.8 million over and above the costs of the tea project in the form submitted to the IBRD, which refer to the capital costs associated with expanding the sea acreage by 5,600 acres only up to 1973/74. In the agreement which set up the Tea Development Authority, they were given responsibility for the cost of development of new plantations only, and Government agreed to meet the costs of rehabilitation of existing plantations, which have been taken over by the Tea Development Authority. These costs will amount to Rs 5.3 million over the next two years, and have been included under the budget of the Ministry of Agriculture and Natural Resources.

14. Therefore the total costs to be incurred by the Tea Development Authority over the Plan Period are Rs 38.2 million, while a further Rs 5.3 million of costs incurred on smallholders' tea plantations will be borne by Government.

C. Sugar Planters Mechanical Pool

15. It is proposed to double the mechanical equipment operated by the Sugar Planters' Mechanical Pool, which undertakes mechanical operations for 30,000 sugarcane planters, vegetable and tobacco growers, who farm a total of 100,000 acres. This additional equipment will be needed initially to uproot and replant the 20,000 acres of smallholders' lands which are at present under certain varieties of cane highly susceptible to gommosis; these varieties are to be completely replaced by 1973. By that time practically all the present equipment of the Mechanical Pool will have come to the end of its useful life, and the new equipment will be needed to continue the normal cane replanting programme and to prepare the land for certain agriculture plan projects, notably the two major irrigation projects.

16. Adequate land preparation and improvement, notably clearing small planters' land of rocks, and also ripping and ridging, is a prerequisite for the success of the proposed extension of irrigation to cane lands. Heavy machinery will be used to prepare the land in the two major irrigation schemes in the North and West (34,000 acres), for a further 10,000—20,000 acres where small-scale underground water schemes will be implemented, and also in a few other areas where rainfall is adequate, but land improvement is necessary to raise cane yields to technically and economically feasible levels.

17. The capital expenditure required for the purchase of the new equipment for the Sugar Planters Mechanical Pool is Rs 11.0 million over the Plan Period. This covers the purchase of twenty-two tractors (180hp. ca) and implements, nine tractors (65hp. ca) and implements, three semi-articulated transporters, three trucks and spares for all items of equipment.

D. Mauritius Broadcasting Corporation

18. The Mauritius Broadcasting Corporation proposes to spend Rs 3.6 million over the Plan Period in order to expand its present facilities and improve its standard of performance.

19. Broadcasting House, which was planned in the early 1960's is now too small and needs extension in order to accommodate administrative offices, a library, conference room, news department and finance department. Recording studios at Broadcasting House are currently used to record live programmes and commercial recordings, and competition for use of studio time has now become so acute that it is essential that a commercial recording studio at Port Louis and Curepipe be provided. Additional facilities and studios for educational television are also required.

20. At the last T.I.E. Conference (1968) the distributors gave notice that, as from 1971, they would shift from films to video tape recordings for all their new programmes. Therefore it is necessary that the M.B.C. be equipped with video tape facilities immediately in order to be able to

telecast new programmes. V.T.R. facilities would further greatly improve the quality of local live programme. Finally, it is proposed to provide Rodrigues with a radio relay station at Mont Malartic since Rodrigues is presently served by two transmitters only operating between 6 a.m. to 12.30 p.m. and reception is poor. This situation is therefore to be improved. The cost of this station has been included under the section on Rodrigues.

E. Housing Authorities

21. The housing programme will be the responsibility of the two housing corporations—the Central Housing Authority, and the Mauritius Housing Corporation, which will undertake a capital investment programme of Rs 58.8 million in total over the Plan Period.

(i) CENTRAL HOUSING AUTHORITY PROGRAMME

22. The Government has pledged itself to provide every small plot holder under the smallholders' tea scheme, which is being administered by the Tea Development Authority, with a house. The C.H.A. will be responsible for the establishment and/or expansion of six tea villages over the Plan Period, three of which will be in the Mare-aux-Vacoas region, one in Dubreuil, another in Midlands, and one in Bellerive. The tea villages will be provided with all the necessary services and amenities, roads, shops, sewerage and water connections, village hall, school, children's playground, football pitch etc. and the site will be landscaped as necessary. Costs of these amenities and services have therefore been allowed for in the tea village programme. A village of 500 houses, complete with amenities is estimated to cost Rs 3.5 million.

23. In the first year it is proposed to complete two tea villages on which some work has already been done. The existing tea village at Dubreuil will be completed by adding on a further 250 houses and a school; no other amenities are required. At Midlands where there is a village half completed with some houses standing but no amenities existing, 250 additional houses and full amenities for the village are to be added.

24. In the second year a completely new village, plus amenities is to be established, to house 500 families in the Mare-aux-Vacoas region. In the third year a small village of 250 houses will be built at Bellerive and a second one started in the Mare-aux-Vacoas region. This latter village will be completed in the third year of the Plan, 1973/74 and another village of 500 houses, plus amenities, will be put up in the Mare-aux-Vacoas region. The total estimated capital expenditure on tea villages over the Plan Period is Rs 16.0 million.

25. The other major item under the Central Housing Authority Programme over the Plan Period is the planned expenditure of Rs 15.6 million for the construction of houses on private sites. It is planned to construct around 3,000 houses over the next four years based on the expected demand for housing, which will range in capital value from Rs 4,100 to Rs 12,600, with the emphasis of the programme being on the low cost

housing. The Housing Expert, who has been applied for under Technical Assistance will be expected to survey the immediate and long term housing needs in Mauritius, advice on slum clearance and types of dwelling required. Accordingly, no project for houses on housing estates has been prepared at this stage, but provision of Rs 1.0 million has been made for the last two years of the Plan for slum clearance and redevelopment, and detailed projects will be drawn up at a later date in the light of the Expert's Report.

26. Lastly, a small sum of Rs 319,000 will be incurred on a medley of minor items of expenditure which have been classified under the one heading of sites and services. These works include payments for sites taken over by the C.H.A., provision of amenities such as roads, storm water drainage, water supply etc. on C.H.A. estates.

(ii) THE MAURITIUS HOUSING CORPORATION

27. The Mauritius Housing Corporation expects to undertake a capital expenditure of Rs 25.9 million on housing over the Plan Period. Details on sites, exact type of houses to be built etc., have still to be worked out.

CAPITAL EXPENDITURE FOR THE PLAN PERIOD 1971–1975

(Rs 000)

	Total Expenditure 1971–1975	*Phasing of Expenditure*			
		1971/72	*1972/73*	*1973/74*	*1974/75*
TOTAL—HOUSING AUTHORITIES ...	58.815	11,800	13,400	15.665	17.950
Central Housing Authority Programme	32,915	6,800	7,000	8,665	10,450
Tea Villages ...	16,000	3,500	3,500	4,000	5,000
Construction of Houses on Private Sites	15,596	2,981	3,500	4,165	4,950
Slum Clearance	1.000	—	—	500	500
Sites and Services	319	319	—	—	—
Mauritius Housing Corporation ...	25,900	5,000	6,400	7.000	7.500

Para-Statal Organizations

TOTAL—PAPA-STATAL ORGANIZATIONS ...	150,483	39,249	41,728	33,541	35,965
Central Electricity Board ...	40,663	13,386	9,413	8,397	9,467
Central Housing Authority ...	32,915	6,800	7,000	8,665	10,450
Mauritius Housing Corporation ...	25,900	5,000	6,400	7,000	7,500
Mauritius Tea Development Authority ...	34,385	11,921	12,103	5,733	4,628
Sugar Planters' Mechanical Pool ...	11,000	—	5,000	3,000	3,000
Mauritius Broadcasting Corporation	3,620	1,642	1,312	246	420
Others	2,000	500	500	500	500